

Processes in Organizational Change

A Final Report

DTIC FILE COPY

by

R. B. Dunham, L. L. Cummings, & J. L. Pierce

University of Wisconsin-Madison  
Northwestern University  
University of Minnesota-Duluth



Prepared for

Office of Naval Research

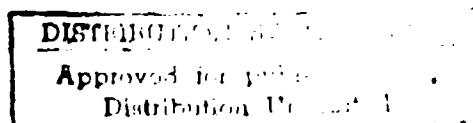
Organizational Effectiveness Unit

Contract No. N00014-83-K-0653

Period Covered: July 1983 - September 1986

Technical Report No. 87-1

June 1987



2007  
 2006  
 2005  
 2004  
 2003  
 2002  
 2001  
 2000  
 1999  
 1998  
 1997  
 1996  
 1995  
 1994  
 1993  
 1992  
 1991  
 1990  
 1989  
 1988  
 1987  
 1986  
 1985  
 1984  
 1983  
 1982  
 1981  
 1980  
 1979  
 1978  
 1977  
 1976  
 1975  
 1974  
 1973  
 1972  
 1971  
 1970  
 1969  
 1968  
 1967  
 1966  
 1965  
 1964  
 1963  
 1962  
 1961  
 1960  
 1959  
 1958  
 1957  
 1956  
 1955  
 1954  
 1953  
 1952  
 1951  
 1950  
 1949  
 1948  
 1947  
 1946  
 1945  
 1944  
 1943  
 1942  
 1941  
 1940  
 1939  
 1938  
 1937  
 1936  
 1935  
 1934  
 1933  
 1932  
 1931  
 1930  
 1929  
 1928  
 1927  
 1926  
 1925  
 1924  
 1923  
 1922  
 1921  
 1920  
 1919  
 1918  
 1917  
 1916  
 1915  
 1914  
 1913  
 1912  
 1911  
 1910  
 1909  
 1908  
 1907  
 1906  
 1905  
 1904  
 1903  
 1902  
 1901  
 1900  
 1899  
 1898  
 1897  
 1896  
 1895  
 1894  
 1893  
 1892  
 1891  
 1890  
 1889  
 1888  
 1887  
 1886  
 1885  
 1884  
 1883  
 1882  
 1881  
 1880  
 1879  
 1878  
 1877  
 1876  
 1875  
 1874  
 1873  
 1872  
 1871  
 1870  
 1869  
 1868  
 1867  
 1866  
 1865  
 1864  
 1863  
 1862  
 1861  
 1860  
 1859  
 1858  
 1857  
 1856  
 1855  
 1854  
 1853  
 1852  
 1851  
 1850  
 1849  
 1848  
 1847  
 1846  
 1845  
 1844  
 1843  
 1842  
 1841  
 1840  
 1839  
 1838  
 1837  
 1836  
 1835  
 1834  
 1833  
 1832  
 1831  
 1830  
 1829  
 1828  
 1827  
 1826  
 1825  
 1824  
 1823  
 1822  
 1821  
 1820  
 1819  
 1818  
 1817  
 1816  
 1815  
 1814  
 1813  
 1812  
 1811  
 1810  
 1809  
 1808  
 1807  
 1806  
 1805  
 1804  
 1803  
 1802  
 1801  
 1800  
 1799  
 1798  
 1797  
 1796  
 1795  
 1794  
 1793  
 1792  
 1791  
 1790  
 1789  
 1788  
 1787  
 1786  
 1785  
 1784  
 1783  
 1782  
 1781  
 1780  
 1779  
 1778  
 1777  
 1776  
 1775  
 1774  
 1773  
 1772  
 1771  
 1770  
 1769  
 1768  
 1767  
 1766  
 1765  
 1764  
 1763  
 1762  
 1761  
 1760  
 1759  
 1758  
 1757  
 1756  
 1755  
 1754  
 1753  
 1752  
 1751  
 1750  
 1749  
 1748  
 1747  
 1746  
 1745  
 1744  
 1743  
 1742  
 1741  
 1740  
 1739  
 1738  
 1737  
 1736  
 1735  
 1734  
 1733  
 1732  
 1731  
 1730  
 1729  
 1728  
 1727  
 1726  
 1725  
 1724  
 1723  
 1722  
 1721  
 1720  
 1719  
 1718  
 1717  
 1716  
 1715  
 1714  
 1713  
 1712  
 1711  
 1710  
 1709  
 1708  
 1707  
 1706  
 1705  
 1704  
 1703  
 1702  
 1701  
 1700  
 1699  
 1698  
 1697  
 1696  
 1695  
 1694  
 1693  
 1692  
 1691  
 1690  
 1689  
 1688  
 1687  
 1686  
 1685  
 1684  
 1683  
 1682  
 1681  
 1680  
 1679  
 1678  
 1677  
 1676  
 1675  
 1674  
 1673  
 1672  
 1671  
 1670  
 1669  
 1668  
 1667  
 1666  
 1665  
 1664  
 1663  
 1662  
 1661  
 1660  
 1659  
 1658  
 1657  
 1656  
 1655  
 1654  
 1653  
 1652  
 1651  
 1650  
 1649  
 1648  
 1647  
 1646  
 1645  
 1644  
 1643  
 1642  
 1641  
 1640  
 1639  
 1638  
 1637  
 1636  
 1635  
 1634  
 1633  
 1632  
 1631  
 1630  
 1629  
 1628  
 1627  
 1626  
 1625  
 1624  
 1623  
 1622  
 1621  
 1620  
 1619  
 1618  
 1617  
 1616  
 1615  
 1614  
 1613  
 1612  
 1611  
 1610  
 1609  
 1608  
 1607  
 1606  
 1605  
 1604  
 1603  
 1602  
 1601  
 1600  
 1599  
 1598  
 1597  
 1596  
 1595  
 1594  
 1593  
 1592  
 1591  
 1590  
 1589  
 1588  
 1587  
 1586  
 1585  
 1584  
 1583  
 1582  
 1581  
 1580  
 1579  
 1578  
 1577  
 1576  
 1575  
 1574  
 1573  
 1572  
 1571  
 1570  
 1569  
 1568  
 1567  
 1566  
 1565  
 1564  
 1563  
 1562  
 1561  
 1560  
 1559  
 1558  
 1557  
 1556  
 1555  
 1554  
 1553

by

University of Wisconsin-Madison  
Northwestern University  
University of Minnesota-Duluth

Office of Naval Research

Organizational Effectiveness Unit

Contract No. N00014-83-K-0653

Period Covered: July 1983 - September 1986

Technical Report No. 87-1

June 1987



Accession For	
NFIS CRAGI	VH
DHS IAP	[ ]
U.S. Census	[ ]
J. Edgar Hoover	
By	
Date Recd.	
Received by (Name)	
(Signature)	
Special Agent	

A-1

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER 87-1	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle)  Processes in Organizational Change		5. TYPE OF REPORT & PERIOD COVERED  FINAL REPORT
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s)  Dunham, R. B., Cummings, L. L., and Pierce, J. L.		8. CONTRACT OR GRANT NUMBER(s)  N00014-83-K-0653
9. PERFORMING ORGANIZATION NAME AND ADDRESS University of Wisconsin 1155 Observatory Drive Madison, WI 53706		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS  NR170-959
11. CONTROLLING OFFICE NAME AND ADDRESS Group Psychology Unit Office of Naval Research Arlington, VA 22217-5000		12. REPORT DATE June 1987
		13. NUMBER OF PAGES 137
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		15. SECURITY CLASS. (of this report)  unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) organizational change receptivity to change focus of attention organizational commitment		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The report briefly describes research conducted during the funding period of this contract. Products of the contract are described, and reports made during the period of support are attached.		

The following publications report the work conducted under this contract. As can be seen, this work focused upon a number of processes involved during organizational change and assimilation of members into organizations.

1. Gardner, D. G., Dunham, R. B., Cummings, L. L., & Pierce, J. L. Focus of attention at work and reactions to organizational change. In press, Journal of Applied Behavioral Science.
2. Gardner, D. G., Cummings, L. L., Dunham, R. B., & Pierce, J. L. Focus of attention at work and leader-follower relationships. In press, Journal of Occupational Behavior.
3. Pierce, J. L., & Dunham, R. B. (1987). Organizational commitment: Pre-employment propensity and initial work experiences. Journal of Management, 13, 1, 163-178.
4. Dunham, R. B., Pierce, J. L., & Castañeda, M. B. Alternative work schedules: Two field quasi-experiments. In press, Personnel Psychology.

Paper #1 addresses a series of organizational redesign interventions. Study is made not only of how members reacted to these changes but, more importantly, how their focus of attention mediated these reactions.

Paper #2 also studies employee focus of attention. In this paper, it is demonstrated that the direction and magnitude of employee focus of attention influence the manner in which employees react to variations in leader behavior.

Paper #3 examines the development of organizational commitment for a group of employees. These employees are studied prior to entering the organization and for one year subsequent to entry.

Paper #4 also explores worker reactions to organizational change. Studies from two different organizations are reported, each utilizing a quasi-experimental design. The manner in which employees react to change (alternative work schedules) is studied over a 7-12 month period.

Not reported specifically in any of these four papers is the work conducted on the development of an instrument to assess worker receptivity to change. During the conduct of research funded by this grant, an exploratory instrument was developed and initial validation conducted. The current version of this instrument contains 18 items and measures: cognitive, affective, and behavioral tendency components of attitude towards change as well as overall receptivity to change.

FOCUS OF ATTENTION AT WORK  
AND REACTIONS TO ORGANIZATIONAL CHANGE

DONALD G. GARDNER  
College of Business and Administration  
University of Colorado-Colorado Springs  
Box 7150  
Colorado Springs, Colorado 80933-7150  
303/593-3356

RANDALL B. DUNHAM  
School of Business  
University of Wisconsin  
1155 Observatory Drive  
Madison, WI 53706  
608/263-2120

L. L. CUMMINGS  
Kellogg Graduate School of Management  
Leverone Hall  
Northwestern University  
Evanston, IL 60201  
312/491-3470

JON L. PIERCE  
Department of Management Studies  
School of Business and Economics  
University of Minnesota-Duluth  
Duluth, MN 55812  
218/726-7929

9/30/86

The research reported here was supported by grant number NR 170-959 from the Office of Naval Research. We acknowledge the assistance of David Greenberger, Peter Sherer, Melissa Mayo, Marc Siegall, and Brian Klaas in the conduct of this study.

FOCUS OF ATTENTION AT WORK  
AND REACTIONS TO ORGANIZATIONAL CHANGE

ABSTRACT

This study examines three major issues: (1) why employees react differently to organizational change, (2) the conceptualization for a multifaceted construct labeled employee focus of attention at work, and (3) the influence of focus of attention on reactions to systematic change efforts. Several related issues are empirically examined in a longitudinal study of 476 clerical workers in three regional offices of a large insurance company. Job change interventions were conducted in each of the three offices, affecting 300 of these employees. Results indicate that focus of attention moderates the effectiveness of job change interventions for both "soft" (e.g., satisfaction) and "hard" (e.g., performance) dependent variables.

This paper theoretically and empirically explores three topics:

(1) why employees react differently to changes in their work environment, (2) identification and understanding of what employees focus their attention upon while at work, and (3) the role that focus of attention has in moderating reactions to planned change. First, we develop the conceptual and operational definitions for a construct labeled employee focus of attention. This construct captures that which occupies employees' cognitive space while they are at work. We argue that the construct is multidimensional, related to individual reactions to organizational change, and measurable. Second, we present data supporting the practical importance of employees' focus of attention while they are at work. We demonstrate that focus of attention moderates employee reactions to planned changes in the work environment. Third, based on the results of our study we suggest ways in which planned change efforts might be made more effective. Finally, we argue for further theoretical and methodological advancements of the construct by proposing specific avenues for future research.

#### Focus of Attention

The focus of attention construct has been conceptually and operationally explored previously (Gardner, Pierce, Dunham, & Cummings, 1985; Gardner, Dunham, Cummings, & Pierce, 1986a; Gardner, Dunham, Cummings, & Pierce, 1986b). In these earlier papers, the focus construct was theoretically developed and received initial, empirical construct validity support. These previous studies have shown that there is significant variation in focus of attention across employees and employee groups. These studies have also shown that focus of

attention influences the way in which employees perceive their work environment and affects reactions to these perceptions once formed. This has been documented in such areas of study as job design, leader behavior, and work unit structure. Focus of attention has also been shown to be conceptually and empirically distinct from such related constructs as organizational commitment, intrinsic motivation, and job involvement. The present paper significantly extends exploration of the importance of focus of attention because it is the first reported study on that construct which explores organizational change.

In the present study, as in prior studies, we define focus of attention as an employee's cognitive orientation toward each of multiple "targets." Focus represents what an employee thinks about, concentrates on, and cognitively attends to while at work. There are many possible targets of attention that employees might focus on while at work, some of which exist inside and some outside the work environment (e.g., one's job and family). Moreover, targets of attention may vary within employees throughout the workday. We believe, however, that despite the numerous possible targets and daily fluctuations, employees do characteristically (i.e., consistently) focus on identifiable classes of targets (e.g., Wacker, 1981). That is, unless some other stimulation (e.g., a comment from a co-worker) disrupts an employee's typical allocation of attention, an employee will routinely attend to and think about specifiable classes of events. We define focus of attention as a characteristic in the global sense, acknowledging that any individual's state at a given moment may not reflect their general tendencies



(cf. Epstein & O'Brien, 1985, for an extensive discussion of global-specific behavior patterns).

In the present study we empirically examine the roles of three targets of attention: (1) job factors (characteristics of employees' jobs in a traditional job design sense), (2) work unit factors (including such characteristics as size and independence of employees' work units), and (3) off-job factors (events and people that exist outside of employees' workplaces). These targets are henceforth respectively referred to as job focus, work unit focus, and off-job focus. We have chosen these three focus of attention targets because we believe they represent major foci of employees' conscious awareness while at work. Furthermore, we have found that these targets of attention are readily comprehended and responded to by employees. Finally, we have found that they interact with worker perceptions of their environment in several nonexperimental studies. Thus, the three targets have proven useful in our earlier research.

#### Focus of Attention and Organizational Change

The impetus for this research derives from two major sources. First, it has long been assumed that a thorough understanding of human behavioral processes is prerequisite to a complete theory of how people perceive and react to workplace experiences. This is particularly true for changes in the nature of work and the context in which these changes take place (cf. Hulin & Blood, 1968). It is readily apparent in the organizational development literature that employee resistance to change has received much attention (e.g., Watson, 1971). Many theories have been advanced to explain why employees differ in their receptiveness to

work environment changes. Examples include such forces as: (1) lack of trust, (2) "frozen" attitudes, values, and/or beliefs, (3) fear of unknown consequences, and (4) lack of involvement in the change process (e.g., Huse, 1980; Lewin, 1951). Unfortunately, despite their face validity, little rigorous research exists to support theories of differential reactions to work environment changes (White, 1977).

We believe that approaching the issue of employee reactions to work environment changes from a more fundamental perspective--the degree to which employees are focusing on what is being changed--might better explain variability in effectiveness of organizational interventions. Our emphasis on what employees think about at work is suggested as a new insight into the underlying processes of employee receptivity to change.

The second impetus for our research comes from the works of Dunham, Pierce, and Newstrom (1983), Mezoff (1982), Weick (1979), and others (e.g., Wacker, 1981), who suggest that the way individuals allocate their attention affects how they perceive stimuli and how they react to those perceptions. For example, Mezoff (1982) concluded that the effectiveness of human relations training (T-groups) varies as a function of cognitive style (viz., field independence). Previous studies of individual differences in perceptual style have been global, generally unrelated to specific targets of attention, and often far-removed from the realities of organizational environments. In contrast, in the present study we empirically examine three specific classes of events that employees possibly focus on while at work (job, work unit, and off-job), and which possibly affect how they perceive and react to actual work environment changes.

While the importance of focus of attention could be demonstrated in several ways (Gardner et al., 1986b), our hypotheses center on focus of attention as a moderator of the relationships between a specific organizational intervention (viz., changes in job content) and employee reactions (e.g., performance, satisfaction). We base our hypotheses on three premises. First, if employees focus their attention highly on their jobs, then they will react more strongly to changes in job content than employees who focus little on their jobs. Second, if employees focus strongly on their work unit, then they will be distracted from and react less to changes in job content, on average, than will employees who focus very little on their work unit. Third, if employees focus strongly on factors/events that exist outside of the general work environment, they will be relatively insensitive to changes in work-related characteristics (compared to employees who focus less on off-job phenomena). Note that we assume that employees with low work unit and low off-job focus concentrate more (though not necessarily strongly) on their jobs than do high work unit and high off-job focus employees. That is, we assume different effects from high job focus than high work unit or off-job focus, because people have limited amounts of attentional capacity, and because humans are primarily serial processors of information (i.e., they think about only one thing at a time). The present studies investigate the role of three particular targets of focus of attention. Although other targets could have been investigated, these three were chosen because of our belief that they represent particular salient targets of attention, and are reasonably stable.

## HYPOTHESES AND RESEARCH QUESTIONS

The organizational development literature is filled with examples of failures of job and organizational change interventions (cf. Frank & Hackman, 1975; Golembiewski, Proehl, & Sink, 1982). Unfortunately, little literature exists which empirically examines the hypothesis that individual differences affect the impact of organizational change on employee reactions. This is especially true when we consider differences in what employees cognitively attend to while at work. One reason that interventions might not "take" is because a significant number of employees simply do not notice the changes, ignore the changes, concentrate very little on the implemented changes, and/or consider the changes to be of little personal relevance. Responses of this nature may be attributed to a cognitive orientation characterized by a low work environment focus. On the other hand, employees who focus a great deal on the work environment are likely to sense changes in that environment, concentrate on those changes, and react strongly to them. Thus, it is predicted that employees' focus of attention will moderate their reactions to work environment changes, with employees reacting more strongly if they are focusing on the work environment aspect being changed.

In the present study, subjects experienced several significant changes to their jobs (e.g., increased feedback about performance). We predicted that employees who characteristically focus on their jobs would react relatively strongly to these changes. On the other hand, we

predicted that employees whose focus is directed elsewhere would be relatively unreactive to changes in their jobs. There are two primary reasons why we expect employee focus of attention to influence worker reactions to organizational changes. First, we expect focus of attention to significantly affect perceptions of the nature of these changes. For example, those who are focusing strongly on the design of their jobs should be more sensitive to changes in their jobs. Second, we expect focus of attention to influence the type and strength of response to a change because of the effect focus has on the salience of that particular aspect of the work environment.

These predictions are detailed in Hypotheses 1, 2, and 3:

- H1 Job focus will interact with job change such that high job focus employees react more strongly to job change than do low job focus employees.
- H2 Work unit focus will interact with job change such that low work unit focus employees react more strongly to job change than do high work unit focus (distracted from job) employees.
- H3 Off-job focus will interact with job change such that low off-job focus employees react more strongly to job change than do high off-job focus (distracted from job) employees.

## METHOD

### Sample and Procedure

Surveys were administered at three regional offices (henceforth referred to as sites A, B, and C) of a large Midwest-based insurance company at two points in time (total N=476, experimental group N=300).

control group N=176). Each survey included all of the self-report measures used in this study. Five months after the first survey, 300 of the subjects experienced planned changes in their jobs. A second survey, identical to the first, was administered three months after the changes began. Participants were assigned to change (experimental) or nonchange (control) groups by random selection of intact employee work units one month prior to the changes. Units were defined by such functions as claims, policy services, and underwriting. For matched functions (e.g., claims) within a research site, work units differed only by the state or area serviced (e.g. Iowa versus Minnesota). Work units were physically separated (e.g., different floors of a building) throughout the study, although within a site all employees were located in the same office complex. Specifically, in site A (N=193) 109 employees were in the experimental group, and 84 were in the control group; in site B (N=153) 108 subjects were in the experimental group and 45 were in the control group; and in site C (N=114) 83 subjects were in the experimental group and 31 were in the control group. The total sample averaged 33.2 years of age, 32 months tenure with the company and had an education level of 12.33 years (25% had some college education). There were no statistically significant age, tenure, or education level differences between control and experimental groups (either within or across sites).

Survey data were collected in a conference room at each workplace on company time. Surveys were administered to groups of approximately 20 employees. Because multiple sessions were necessary to survey all participants, survey directions were uniformly presented using a videotape played at the beginning of each session. Two members of the

research team were present during the survey to coordinate the process and answer questions. No members of management were present. Employees were given the opportunity to decline participation in the survey. Over 95% chose to participate, and 95% of those employees voluntarily signed their names to their surveys to allow matching of surveys across time, and to allow additional data collection from subjects' supervisors and personnel records.

Job change interventions. The job changes conducted during this study were implemented as part of a program designed to concurrently improve the quality of work life for employees and improve organizational effectiveness. Our overall strategy followed the traditional action-research model. To design the changes, a series of 23 "job improvement teams" were formed--one for each of the several employee functions at each location. Each team consisted of three clerical employees, one first-line supervisor, one second-line supervisor, one member of the research team, and one representative from the corporate office of the company.<sup>1</sup>

At the first meeting of each team, results of the first survey (the pretest obtaining responses to questions regarding job characteristics, job satisfaction, motivation, etc.) were presented along with aggregated personnel data for the same employees. The data were the primary topic of discussion at this first meeting. At the second meeting, an attempt was made to identify strengths and weaknesses of employee responses as well as the likely causes of these responses (e.g., leader behaviors, job design, work unit structure). The third meeting of teams was devoted to identifying potential job changes to enhance quality of work

life and organizational effectiveness. Subsequent to the third meeting, the research team integrated suggested changes and presented these as a written proposal to top management of the company.<sup>2</sup> After review by top management (most suggestions were approved), the final meetings of the teams focused on developing implementation plans for introducing the job changes. Top management provided visible support for proposed changes. Figure 1 summarizes the study procedure.

---

Insert Figure 1 about here

---

A total of 23 sets of interventions were made, each consisting of a number of job changes, one set for each of the job improvement teams. Each set of changes was presented to employees as a three-month experiment after which the effectiveness of the changes would be determined. Decisions for permanent changes were to be based on the results of the three-month trials.<sup>3</sup>

The interventions in all three sites were multi-faceted, but their primary focus was techno-structural (cf. Friedlander & Brown, 1974; and Nicholas & Katz, 1985). The model driving most of the planned changes was traditional job enrichment theory (e.g., the job characteristics model; Hackman & Oldham, 1980), though some of the changes were incidental and relatively minor (e.g., putting bulletin boards in work unit areas). Job enrichment theory essentially states that when employees perceive their work to be meaningful, feel responsible for the results of their work, and have knowledge about the results of their



work efforts, they will evince high satisfaction, motivation, performance, attendance, punctuality, and intent to stay with the organization (our dependent variables; see below). Thus, attempts were made to change the nature of the work itself to create the pre-requisite feelings necessary for the desirable outcomes.

At each of the three regional offices, certain changes were included in all of the interventions. In site A, the following changes were made: (1) feedback about individual performance was made more specific and given more often by supervisors, (2) monthly meetings were initiated in which work unit members could identify problems, and develop and implement solutions to the problems, and (3) each work unit participated in a project to enhance awareness of the functions of other work units, including such aspects as career moves, cross training opportunities and explanations of how work flowed through the office. In site B, the following changes were made: (1) measurement of work output was changed from a daily basis to a weekly basis (job improvement teams felt that there was excessive monitoring of performance), (2) supervisors developed and implemented individual quality of work measures for subordinates, (3) supervisors met with subordinates individually each month to provide performance feedback, (4) each unit made a presentation to all the other work units, explaining its functions and responsibilities, and (5) monthly meetings similar to those in site A were initiated. Changes in site C included all those made in site B except for the monthly meetings.

In addition to changes that were common to all experimental groups in a given site, each experimental group experienced changes that were

specific to their work unit which generally tailored the redesign of individual jobs to the characteristics of the different work units. For example, one unit in site A formed semi-autonomous work groups where previously each employee had performed, individually, only one or a few tasks. In general, both technical and social aspects of the work content and context were changed. The interventions were appropriately viewed by the senior management of the company as a large scale, long-term organizational development program involving both structural and procedural changes.

Given that the experiments involved a large number of changes, it was the collage of interventions which was likely to affect employee behaviors and attitudes. This study examines the reactions of employees to the aggregate of these changes. Since changes across the three offices were sufficiently different, and there were several significant pre-test differences across offices (see below), we have a three-sample test of our hypotheses. We must emphasize that in the present paper we are not particularly interested in documenting which of the organizational changes produced what specific types of effects. Rather, we are interested in a relatively exploratory test of the degree to which focus of attention influences reactions to organizational change in a more general sense. Given our perspective, we make no attempt to isolate the effects of the individual changes.

#### Variables and Measures

##### Focus of Attention

Focus of attention was measured with scales developed by Gardner et al. (1985). These scales were designed to reduce common methods bias

with other conventional measures by using a nontraditional item format. Specifically, subjects were asked to indicate how much they "think about" each of the three focus targets (job, work unit, and off-job) while they are at work. Each target was defined on the instrument, and subjects indicated their responses on single 13 cm vertical lines anchored by almost all the time at the top and almost never at the bottom (see Figure 2). There were three such scales, one for each of the focus targets. Scores for each target were derived from the 13 cm scale using a 50-point, equal interval scale (0 = almost never, 50 = almost all of the time). Test-retest reliabilities of the focus measures in our prior research have averaged about .64 over two to three months. An additional advantage of our measurement technique is that by dividing each specific focus score by the sum of focus scores, an index of the degree to which an employee focuses on a target relative to total focus of attention is created. Thus, we have a second formulation which jointly considers an individual's scores on all three focus targets. Secondly, these scores, which we term focus percent, reduce much of the variance in scores caused by leniency, central tendency, and severity response styles, because they produce scores in a common metric across subjects; that is, percent (proportion) of focus allocated to each of the three possible targets.

---

Insert Figure 2 about here

---

### Dependent Variables

Job satisfaction was measured with the Index of Organizational Reactions (Dunham, Smith, & Blackburn, 1977). Items for the supervision, kind of work, amount of work, co-worker, physical work conditions, and compensation satisfaction subscales were included. Because the organizational changes implemented in these studies were broad, and since our emphasis in this paper is on reactions to changes in total, an overall measure of satisfaction was used which was formed by adding the individual subscales.

Intrinsic motivation was measured with the four-item scale developed by Hackman and Lawler (1971).

Behavioral intentions were measured with four 5-point Likert-type items, two for absence intent and two for turnover intent. Subjects indicated the degree to which they agreed with the following statements: (a) "I often think about quitting my job", (b) "I expect to quit my job within the next three years", (c) "I often think about not coming to work", and (d) "I expect to be absent from work at least once in the next two months." Items (a) and (b) were added to form a quit intent measure, while items (c) and (d) were added to form an absence intent measure.

Performance was measured three different ways. First, subjects rated their own performance using a single-item, five-point, very good to very poor scale (one month prior to and three months after the job changes). Second, supervisors rated their subordinates using the same scale as subordinates. Third, the company monitored each employee's productivity with a formal "work measurement plan" (WMP). This WMP

system was based on a time-motion study of each job, resulting in an expected performance rate. A count was maintained of the number of tasks completed each day. A per cent of standard index was calculated for each subject each day. WMP data were independently verified by the Management Information Systems Division of the company at the unit level. In the few cases where discrepancies were found, the immediate supervisor was responsible for resolving the difference.

Absence and tardiness data were collected from personnel records. Specifically, absence occurrences, days absent, tardy occurrences, and minutes tardy per occurrence were gathered for subjects who identified themselves on their survey. Except for minutes tardy, data were converted to a monthly rate before analysis. Tardiness data were not available from site C.

#### Data Analyses

Reliability estimates were obtained using test-retest correlations and coefficient alphas. Data were analyzed using analyses of variance and moderated regression procedures (a dummy-coded variable was used to indicate whether subjects were members of the experimental or control group). Hypothesized interactions were tested using hierarchical multiple regression (cf. Cohen & Cohen, 1975). With this statistical procedure, dependent variable measures are regressed on treatment (experimental versus control) and focus of attention first, and then on the interaction of treatment and focus. This controls for any pretest differences between groups before the interaction is evaluated. A significant interaction is interpreted only after effects of condition and focus of attention are partialled out. Interactions of focus of

attention with job changes were examined on posttest measures within each of the three research sites (A, B, and C), using both raw and percent focus scores. Where both forms of the focus measures produced similar interactions, only the raw score interaction is reported.

## RESULTS

### Descriptive Statistics

Table 1 presents the sample sizes, means, standard deviations, and reliability estimates of all study variables. Table 2 presents intercorrelations of pretest and posttest measures. Examination of those correlations reveals a pattern also found in Gardner et al. (1986b): Employees who are satisfied with their work environment tend to have a high job focus, while employees who are dissatisfied with their environment tend to have a high off-job focus.

---

Insert Tables 1 and 2 about here

---

Analyses of variance on pre-test measures revealed that the three research sites significantly differed ( $p < .05$ ) on all dependent variable measures except self-rated performance ( $F = .62$ , ns), further supporting our strategy of separately analyzing data for the three sites.

### Main Effects of Interventions

Main effects of the interventions on post-test dependent variable measures were tested with multiple regression. Specifically, each post-test dependent variable was first regressed on the corresponding pre-test measure, and then on the dummy-coded intervention variable.

Significant intervention effects ( $p < .05$ ) were found on: WMP performance in site A (negative effect), and self-ratings of performance in sites B and C (positive effects). Overall, the interventions had few direct effects on the dependent variables. Some employees showed improvement following the interventions, some declined, and others did not change substantially.

#### Tests of Hypotheses

Hypothesis 1 predicted interactions of pretest job focus with the job changes on posttest dependent variable measures. Three significant interactions were obtained in site A with raw scores, on intrinsic motivation ( $\Delta R^2 = .06$ ;  $p < .01$ ; 184 df), absence intent ( $\Delta R^2 = .02$ ;  $p < .05$ ; 180 df), and WMP performance ( $\Delta R^2 = .05$ ;  $p < .01$ ; 97 df). The interaction on motivation was as predicted. Intrinsic motivation was higher in the experimental group than the control group for high job focus employees, while the opposite was true for low job focus employees. The interaction on absence intent, opposite to predictions, indicated that intent was higher in the experimental group than the control group for low job focus employees, and no differences for high job focus employees. The interaction on performance indicated that performance was much lower in the experimental group than the control group for high job focus employees, and no differences for low job focus employees. This also is contrary to prediction, because we predicted that high job focus employees would react positively to the changes and low job focus employees would be relatively unreactive. In addition, two interactions of job focus percent and the intervention were obtained on minutes tardy ( $\Delta R^2 = .19$ ;  $p < .01$ , 30 df), and overall job satisfaction ( $\Delta R^2 = .06$ ;  $p < .01$ ;

183 df). The interaction on tardiness indicates that high job focus employees in the experimental group were much less tardy than high job focus employees in the control group, while the opposite was true for low job focus employees. The interaction on satisfaction indicates that high job focus employees were much more satisfied in the experimental group than in the control group, while the opposite was true for low job focus employees. The latter two interactions clearly support Hypothesis 1. Thus, in site A, it appears that employees who focus strongly on their jobs reacted inconsistently to job changes, when compared to those employees who did not experience the job changes.

Three significant interactions with raw scores were obtained in site B, on satisfaction ( $\Delta R^2 = .08$ ;  $p < .01$ ; 144 df), intrinsic motivation ( $\Delta R^2 = .02$ ;  $p < .05$ ; 149 df), and absence intent ( $\Delta R^2 = .02$ ;  $p < .05$ ; 149 df). The interactions on satisfaction and motivation indicated higher means in the experimental group than the control group for low job focus employees, while the opposite was true for high job focus employees. The interaction on absence intent indicated that the mean was higher in the experimental group than the control group for high job focus employees, while the opposite was true for low job focus employees. These three interactions were opposite to predictions, because we predicted that high job focus employees would react positively to the changes and low job focus employees would be relatively unreactive. Two additional interactions were obtained with the job focus percent measure: on absence occurrences ( $\Delta R^2 = .24$ ;  $p < .01$ ; 78 df), and tardy occurrences ( $\Delta R^2 = .15$ ;  $p < .05$ ; 30 df). Both of these interactions indicate, as hypothesized, that absence and tardiness was lower in the



experimental group than the control group for high job focus employees, while the opposite was true for low job focus employees.

In the third site (C) two significant interactions of job focus percent and the intervention were obtained on supervisor-rated performance ( $\Delta R^2 = .03$ ;  $p < .05$ ; 97 df) and absence occurrences ( $\Delta R^2 = .07$ ;  $p < .05$ ; 64 df). These interactions indicate, as hypothesized, that performance is higher and absence lower for high job focus employees in the experimental group than the control group. There was little difference in levels across conditions for low job focus employees. Thus, while results are mixed in each site, Hypothesis 1 tended to receive support on "hard" measures (e.g., absence), but not on "soft" measures (e.g., satisfaction).

Hypothesis 2 predicted interactions of work unit focus and the interventions on the study's dependent variables. No significant interactions were found in site A. Four significant interactions with raw focus scores were obtained in Site B, on satisfaction ( $\Delta R^2 = .08$ ;  $p < .01$ ; 143 df), intrinsic motivation ( $\Delta R^2 = .06$ ;  $p < .01$ ; 184 df), quit intent ( $\Delta R^2 = .03$ ;  $p < .05$ ; 148 df), and supervisor-rated performance ( $\Delta R^2 = .03$ ;  $p < .05$ ; 141 df). The first three interactions were as predicted. Favorable reactions were higher in the experimental group than the control group for low work unit focus employees, while the opposite was true for high work unit focus (job-distracted) employees. The interaction on performance indicates no differences across conditions for high work unit focus employees, as hypothesized. However, low work unit focus employees performed better in the control group than the experimental group, contrary to predictions. One

additional interaction was obtained with work unit focus percent scores on absence occurrence ( $\Delta R^2 = .19$ ;  $p < .01$ ; 78 df ). In support of Hypothesis 2, high work unit focus employees showed no differences in absences across conditions. However, contrary to predictions, low work unit focus employees were more absent in the experimental group than in the control group. Lastly, in site C, two significant interactions were obtained with work unit focus percent scores on supervisor-rated performance ( $\Delta R^2 = .05$ ;  $p < .05$ ; 99 df ) and self-rated performance ( $\Delta R^2 = .03$ ;  $p < .05$ ; 98 df ). Both of these interactions indicate, contrary to Hypothesis 2, that high work unit focus employees perform better in the experimental group than the control group, while there were no differences for low work unit focus employees. Overall, Hypothesis 2 was supported for "soft" measures of employee responses, but not on the "hard" measures. This pattern is opposite to what was found for Hypothesis 1.

Hypothesis 3 predicted interactions of off-job focus and the interventions on the study's dependent variables. Two significant interactions were obtained with raw focus scores, in site A, on absence intent ( $\Delta R^2 = .02$ ;  $p < .05$ ; 180 df), and on quit intent ( $\Delta R^2 = .02$ ;  $p < .05$ ; 184 df). Both interactions indicate that the mean was higher in the experimental group than the control group for high off-job focus employees, while there was little difference for low off-job focus employees. Similar effects were found in site B on quit intent ( $\Delta R^2 = .02$ ;  $p < .05$ ; 144 df ). An additional effect in site B with focus percent scores on WMP performance ( $\Delta R^2 = .03$ ;  $p < .05$ ; 110 df ) indicates that high off-job focus employees performed better in the experimental group than

the control group, while no differences were found for lows. In site C, the effect on quit intent was again discovered ( $\Delta R^2 = .03$ ;  $p < .05$ ; 105 df)

with high off-job focus employees reacting negatively to the intervention and low off-job focus employees reacting very little. All of these interactions are opposite to predictions for Hypothesis 3 because we expected high off-job focus (job-distracted) employees to be relatively unreactive to changes in their jobs. One interaction with focus percent scores in site C partially supported Hypothesis 3, on absence occurrence ( $\Delta R^2 = .05$ ;  $p < .05$ ; 64 df). Absence occurrence was lower for low off-job focus employees in the experimental group than the control group, but the opposite occurred for high off-job focus employees (i.e., they reacted negatively to the intervention). Overall, Hypothesis 3 was consistently unsupported.

In summary, Hypothesis 1 was supported by significant interactions of job focus and change on motivation and satisfaction (site A), tardiness, absence, and supervisor-rated performance, and unsupported on absence intent, WMP performance, and satisfaction and motivation (site B). Hypothesis 2 was supported by significant interactions of work unit focus and change on satisfaction, motivation, and quit intent, and unsupported on self- and supervisor-rated performance, and absence. Hypothesis 3 was unsupported by significant interactions of off-job focus and change on absence and quit intent, WMP performance, and absence. Table 3 summarizes significant results related to all three hypotheses in all three research sites.

---

Insert Table 3 about here

## DISCUSSION

There were two major goals of the present study. First, we wanted to rigorously examine the question of why many organizational interventions succeed or fail. Second, we wanted to continue our exploration of the focus of attention construct, with a new sample and different research question. Thus, the present research explores both practical and theoretical issues.

Focus of attention moderated the effectiveness of job change interventions in the three offices examined in the present study. Significant interactions were obtained at well above chance rates, and several accounted for substantial amounts of dependent variable variance (up to 24%).<sup>4</sup> Moreover, examination of the role of focus of attention illustrated effects of the interventions that would have gone undetected if only main effects had been studied. Results, however, provide very mixed support for Hypotheses 1 and 2, and consistent non-support for Hypothesis 3. Because of the mixed and contradictory nature of results it is with caution that we offer an interpretation of our findings.

Hypothesis 1 predicted that high job focus employees would react more favorably to the job changes than would low job focus employees. At first glance it would seem that this hypothesis received very mixed support: Seven significant interactions supported the hypothesis, while five did not. However, five of the seven supportive interactions were on "hard" dependent variables (i.e., the source of the data was not the employee). Four of the five unsupportive interactions were on "soft" dependent variables (i.e., self-report data). Common methods bias does

not likely account for this pattern because analyses dealt with non-linear (interactive) relationships between focus and the dependent variables. High job focus employees in our study reacted consistently (i.e., across all three sites) and positively to the interventions in terms of performance, absence, and/or tardiness. Close examination of the pattern of interactions on the soft dependent variables reveals that in site A, highs also responded positively in terms of intrinsic motivation and overall satisfaction, and that it was only in site B that highs became less satisfied and motivated after the interventions. We can only surmise that differences in the specific nature and actual implementation of the interventions at the two sites account for the different results on satisfaction and motivation. It would appear that effects are less generalizable for affective variables than for behavioral variables. Nonetheless, our general hypothesis that the degree to which employees focus on specific targets in their work environment affects how much they will react to changes to those targets is supported. This is true even though the moderating effects of focus of attention were not in the predicted directions. When we developed our hypothesis we had assumed that job changes to be implemented would be considered favorably by most employees. In reality, the perceived "desirability" of the changes actually implemented varied substantially, particularly from site to site.

Hypothesis 2 predicted that employees who focus strongly on a non-job related target, their work unit, would react less to changes in their jobs than would employees who do not strongly focus on their work unit. Results relevant to this hypothesis resemble the pattern found

for Hypothesis 1: inconsistent at first glance, but more logical after considering type of dependent variable. All three supportive interactions were on soft dependent variables (viz., satisfaction, intrinsic motivation, and quit intent), while three out of four non-supportive interactions were on hard dependent variables (opposite to Hypothesis 1). Close examination of the non-supportive interactions shows that two were in site C, while the other two indicate that high work unit focus employees were less reactive to job changes (as hypothesized), but that lows reacted negatively. As with Hypothesis 1, local differences in the nature and/or implementation of the job changes could account for this result. Indeed, in site B highs were consistently less reactive than lows, while the opposite was true in site C (there were no significant interactions in site A). Thus, it again appears that employees must focus on the target of an intervention before it will have much of an impact on their effectiveness.

The results related to Hypothesis 3 were the most consistent. Unfortunately, those results were contrary to predictions: Employees with a high off-job focus reacted strongly and negatively to the interventions while low off-job focus employees reacted very little. Across all three sites high off-job focus employees had higher quit intentions in the experimental groups than the control groups, suggesting that the job changes increased their desire to terminate their employment. Many possible interpretations of this finding could be offered, including those mentioned in the introduction (e.g., highs have low trust in their employers). An alternative consistent with our attentional capacity underpinnings, which we offer with appropriate

caution, is that: (1) high off-job focus employees are disaffected with their work environment (see correlations in Table 2), (2) they think about off-job factors as a coping effort, and (3) changes in the work environment force them to focus on their work, which they prefer not to do, causing them to become even more disaffected with their work environment. While only additional research can confirm this explanation, it is consistent with the suggestion that employees who focus a great deal on factors off the job do so more intentionally than employees who focus on their jobs or their work units. That is, high off-job focus employees are forced toward their target of attention, while high job and work unit employees are drawn towards theirs (as evidenced by the pattern of correlations found in this study and our previous research; cf. Gardner et al., 1985, 1986a, and, 1986b).

In summary, it appears that change efforts in organizations may have stronger effects on employees who are focusing on the targets of the change. The effects of change efforts on these high-focusing individuals will vary from positive to no effect to negative, depending on how the change is perceived (i.e., good, bad, or neither good nor bad). This proposition, if supported in future research on organizational change, has a major practical implication. When designing interventions to change work environments, change agents should consider (perhaps through pre-testing) who is and who is not likely to be focusing on the target of change. If the intervention is to be successful, employees who are not focusing on the target of change must have their attention re-directed, if only temporarily. Possible mechanisms to accomplish this include: (1) identifying and communicating

dissatisfaction with current functioning, (2) involving the low focus employees in the design of the intervention, (3) publicizing the planned change thoroughly and consistently throughout the pre-change period, (4) setting up reward contingencies that reinforce focusing of attention on change targets (e.g., giving monetary bonuses to employees for suggesting new ways to effectively co-ordinate work unit activities), (5) providing interim feedback during change implementation, and (6) appointing "transition managers" whose responsibilities include keeping affected employees focused on targets of change (Nadler, 1981). The preceding assumes that the planned change is well-designed and supported by management or it could exacerbate an already bad situation. At a very basic level, it is likely that focus of attention plays two important roles in reactions to organizational change interventions. The first of these involves getting the employee to notice that some important change has in fact been made. The second role occurs after the employee has noted the characteristics of the change. In this second role of focus of attention, the salience and, therefore, impact of the change will vary from employee to employee depending on their profiles of focus of attention.

The present study was intended as an extension of the exploratory research begun by Gardner et al. (1986a, 1986b, and 1985). We believe that the findings accrued over the three studies demonstrate the importance of the focus of attention constructs. It seems that what people think about at work affects how they will react to their work environment perceptions. Some of our recent research conducted after the experimental studies reported in the present paper have isolated and



operationalized a number of additional, relevant targets for focus of attention. We have also developed a Likert form of the focus of attention instrument which parallels the scales used in the present study. Future experimental research is likely to be more productive if additional specific targets are incorporated. It was found in one study, for example (Gardner et al., 1986a), that reactions to leader behavior are best understood by examining the degree to which employees focus on leader behavior. Relating this and our other findings to organizational change, we expect that future researchers may find more consistent moderating results than in this largely exploratory study when the target of a change effort and the measured focus of attention target are similar, or "isomorphic" (cf. Gardner et al., 1986a).

In the introduction to this paper we argued that focus of attention fluctuates somewhat from day to day and perhaps from hour to hour for some employees. Despite this, we suggested that employees have characteristic profiles of focus of attention and that these relatively enduring profiles are useful for understanding reactions to work experiences. Although the results of the present study suggest that this is true, a fertile area for further investigation would be the degree to which focus of attention has both "trait" and "state" characteristics, and the relative importance of these two components in affecting employee reactions. While we believe we are primarily measuring a trait with our focus scales, it may be that subject states at the times they completed pre-tests in the present study partially account for the mixed nature of our results. Relatedly, we have also conducted explorations of the importance of particular focus profiles to

determine if there is any sort of interaction among the various focus targets. To date, these explorations have been relatively superficial and have not yet yielded significant additional utility beyond analyses such as those reported in the present paper. Our "percentage" formulation of the focus targets has emerged as the most useful joint operationalization of focus targets. While there is considerable overlap in significant interaction results produced by the raw and percentage expressions (approximately 80%), there is also a clear tendency for the different formulations to relate to hard and soft dependent variable measures in different ways. We feel further conceptual/theoretical development is necessary to specify why this is so and to facilitate capitalizing on these findings.

## ENDNOTES

1. Job improvement teams were formed prior to the point in time at which employees were told whether they were in an experimental or control group. When the experimental and control groups were defined, all employees were aware of which work units were involved in experimental or control groups.
2. Although the research team attempted to function merely as facilitators in the design of job changes, it is likely that some of our biases influenced the process. For example, we define job design measures as having central importance to the planning of organizational changes. We guided the discussions of potential changes, and we prepared the documents forwarded to top management describing changes. It is likely, therefore, that our own ideologies influenced the nature of the changes. However, this is true of the majority of organizational interventions, and is in fact what consultants are often compensated to do.
3. Evaluation by employees and management of the effectiveness of the trials was based on surveys of employees, organizational personnel records, and assessments of costs/savings associated with structural changes. Approximately 70 percent of the changes included in trials were subsequently implemented company-wide over a three year period.
4. It should be noted that using percentage of variance explained as a criterion for judging utility of a model or measure is often inappropriate. When effects likely cumulate over time, as is the case for most research in organizations, variance explained underestimates the real importance of measured predictors (Abelson, 1985). For example, Abelson found that the percentage of variance explained by ability in a single, major league batting performance (at-bat) is .317%.

## REFERENCES

- Abelson, R. P. (1985). A variance explanation paradox: When a little is a lot. Psychological Bulletin, 97(1), 128-133.
- Cohen, J. & Cohen, P. (1975). Applied multiple regression/correlation analysis for the behavior sciences. New Jersey: Erlbaum.
- Dunham, R. B., Pierce, J. L., & Newstrom, J. W. (1983). Job context and job content: A conceptual perspective. Journal of Management, 9, 187-202.
- Dunham, R. B., Smith, F. J., & Blackburn, R. S. (1977). Validation of the Index of Organizational Reactions with the JDI, the MSQ, and the Faces scales. Academy of Management Journal, 20, 420-432.
- Epstein, S. & O'Brien, E. J. (1985). The person-situation debate in historical and current perspective. Psychological Bulletin, 98, 513-537.
- Frank, L. L. & Hackman, J. R. (1975). A failure of job enrichment: The case of the change that wasn't. Journal of Applied Behavioral Science, 11, 413-436.
- Friedlander, F., & Brown, L.D. (1974). Organization development. Annual Review of Psychology, 25, 313-341.
- Gardner, D. G., Dunham, R. B., Cummings, L. L., & Pierce, J. L. (1986a, in press). Focus of attention at work and leader-follower relationships. Journal of Occupational Behavior.
- Gardner, D. G., Dunham, R. B., Cummings, L. L., & Pierce, J. L. (1986b). Focus of attention at work: Construct definition and empirical validation. Manuscript under review.

- Gardner, D. G., Pierce, J. L., Dunham, R. B., & Cummings, L. L. (1985, August). Focus of attention at work and reactions to work experiences. Paper presented at the annual meeting of the Academy of Management, San Diego.
- Golembiewski, R. T., Proehl, C. W., & Sink, D. (1982, April). Estimating the success of OD applications. Training and Development Journal, 86-95.
- Hackman, J. R. & Lawler, E. E. (1971). Employee reactions to job characteristics. Journal of Applied Psychology Monograph, 55, 259-286.
- Hackman, J. R. & Oldham, G. R. (1980). Work redesign. Reading, MA: Addison-Wesley.
- Hulin, C. L., & Blood, M. R. (1968). Job enlargement, individual differences, and worker responses. Psychological Bulletin, 69, 41-55.
- Huse, E. F. (1980). Organization development and change (2nd ed.). St. Paul, MN: West.
- Lewin, K. (1951). Field theory in social science. New York: Harper and Row.
- Mezoff, B. (1982). Cognitive style and interpersonal behavior: A review with implications for human relations training. Group and Organization Studies, 7, 13-34.
- Nadler, D. A. (1981). Managing organizational change: An integrative perspective. Journal of Applied Behavioral Science, 17, 191-211.
- Sims, H. P., Szilagyi, A. D., & Keller, R. T. (1976). The measurement

of job characteristics. Academy of Management Journal, 19, 195-212.

Wacker, G. J. (1981). Towards a cognitive methodology of organizational assessment. Journal of Applied Behavioral Science, 17, 114-129.

Watson, G. (1971). Resistance to change. American Behavioral Scientist, 14, 745-766.

Weick, K. E. (1979). Cognitive processes in organizations. In B. M. Staw (Ed.), Research in organizational behavior: Vol. 1. Greenwich, CT: JAI Press.

White, J. K. (1977). Individual differences in the job quality-worker response relationship: Review, integration and comments. Academy of Management Review, 2, 267-280.

Table 1

## Descriptive Statistics for Study Variables

Variable	Pre-Test				Post-Test			
	<u>M</u>	<u>SD</u>	<u><math>\alpha</math></u>	<u>N</u>	<u>M</u>	<u>SD</u>	<u><math>\alpha</math></u>	<u>N</u>
Job Focus								
Raw:	32.28	11.55	NA	461	31.62	11.47	NA	465
Z:	.37	.12	NA	450	.36	.12	NA	461
Work Unit Focus								
Raw:	30.51	11.86	NA	459	30.17	11.88	NA	463
Z:	.34	.10	NA	450	.34	.10	NA	461
Off-Job Focus								
Raw:	25.06	13.70	NA	453	25.09	12.77	NA	463
Z:	.29	.15	NA	450	.30	.15	NA	461
Job Satisfaction	3.46	.51	.91	457	3.44	.52	.91	458
Intrinsic Motivation	3.93	.57	.75	473	3.82	.58	.81	471
Quit Intent	2.71	1.07	.77	473	2.80	1.05	.80	472
Absence Intent	2.36	.91	.60	475	2.42	.90	.62	468
Performance								
Self-Rated:	2.74	.80	NA	190	2.90	.90	NA	258
Supervisor:	3.15	.76	NA	236	3.18	.73	NA	259
WMP:	88.16	14.76	NA	364	87.59	15.65	NA	311
Absence								
Occurrences:	.09	.08	NA	293	.11	.10	NA	249
Days:	.14	.19	NA	312	.17	.20	NA	261
Cardiness								
Occurrences:	.12	.10	NA	68	.13	.11	NA	76
Minutes:	2.58	2.30	NA	83	2.68	2.52	NA	74

Table 2

Intercorrelations of Study Variables<sup>a</sup>

Variable	1.A.	1.B.	2.A.	2.B.	3.A.	3.B.	4	5	6	7	8.A.	8.B.	8.C.	9.A.	9.B.	10.A.	10.B.
1. Job Focus A. Raw: B. Z:	.39 <sup>ab</sup> (.68 <sup>ab</sup> )	.70 <sup>ab</sup> (.38 <sup>ab</sup> )	.23 <sup>ab</sup> .08 <sup>a</sup>	.09 <sup>a</sup> .11 <sup>a</sup>	-.15 <sup>ab</sup> (.35 <sup>ab</sup> )	-.28 <sup>ab</sup> (.37 <sup>ab</sup> )	.18 <sup>ab</sup> .19 <sup>ab</sup>	.26 <sup>ab</sup> .22 <sup>ab</sup>	-.20 <sup>ab</sup> (.23 <sup>ab</sup> )	-.14 <sup>ab</sup> (.20 <sup>ab</sup> )	.04 .09	.03 .00	.01 (.01)	.05 .10	-.05 (.00)	.00 (.01)	.13 (.09)
2. Work Unit Focus A. Raw: B. Z:	.52 <sup>ab</sup> (.08 <sup>a</sup> )	-.07 (.30 <sup>ab</sup> )	.72 <sup>ab</sup> (.29 <sup>ab</sup> )	.78 <sup>ab</sup> (.29 <sup>ab</sup> )	-.09 (.43 <sup>ab</sup> )	-.51 <sup>ab</sup> (.61 <sup>ab</sup> )	.06 .07	.22 <sup>ab</sup> .17 <sup>ab</sup>	-.10 <sup>ab</sup> (.15 <sup>ab</sup> )	-.05 (.14 <sup>ab</sup> )	-.02 (.01)	.07 .07	.03 (.05)	.03 (.09)	-.01 (.06)	.01 (.02)	.06 (.08)
3. Off-Job Focus A. Raw: B. Z:	-.16 <sup>ab</sup> (.59 <sup>ab</sup> )	-.64 <sup>ab</sup> (.74 <sup>ab</sup> )	.02 (.43 <sup>ab</sup> )	-.44 <sup>ab</sup> (.62 <sup>ab</sup> )	(.55 <sup>ab</sup> ) (.80 <sup>ab</sup> )	.81 <sup>ab</sup> (.55 <sup>ab</sup> )	-.19 <sup>ab</sup> (.20 <sup>ab</sup> )	-.23 <sup>ab</sup> (.29 <sup>ab</sup> )	.29 <sup>ab</sup> (.28 <sup>ab</sup> )	.29 <sup>ab</sup> (.26 <sup>ab</sup> )	-.06 (.07)	-.02 (.04)	-.01 (.03)	-.12 <sup>ab</sup> (.14 <sup>ab</sup> )	-.03 (.04)	-.04 (.01)	.03 (.00)
4. Job Satisfaction	.22 <sup>ab</sup>	.23 <sup>ab</sup>	.07	.05	-.20 <sup>ab</sup>	-.21 <sup>ab</sup>	(.64 <sup>ab</sup> )	.30 <sup>ab</sup>	-.53 <sup>ab</sup>	-.44 <sup>ab</sup>	-.00	.14 <sup>ab</sup>	.09	.07	.05	.09	.10
5. Intrinsic Motivation	.26 <sup>ab</sup>	.22 <sup>ab</sup>	.35 <sup>ab</sup>	.13 <sup>ab</sup>	-.19 <sup>ab</sup>	-.26 <sup>ab</sup>	.32 <sup>ab</sup>	(.51 <sup>ab</sup> )	.26 <sup>ab</sup>	-.23 <sup>ab</sup>	.08	.08	.10 <sup>ab</sup>	.07	-.04	-.13	-.02
6. Quit Intent	-.22 <sup>ab</sup>	-.23 <sup>ab</sup>	-.13 <sup>ab</sup>	-.15 <sup>ab</sup>	.26 <sup>ab</sup>	.28 <sup>ab</sup>	-.59 <sup>ab</sup>	-.28 <sup>ab</sup>	(.65 <sup>ab</sup> )	.61 <sup>ab</sup>	-.01	-.05	-.05	-.00	.05	.09	-.03
7. Absence Intent	-.22 <sup>ab</sup>	-.27 <sup>ab</sup>	-.06	-.12 <sup>ab</sup>	.32 <sup>ab</sup>	.30 <sup>ab</sup>	-.46 <sup>ab</sup>	-.23 <sup>ab</sup>	.63 <sup>ab</sup>	(.52 <sup>ab</sup> )	-.01	.04	.02	-.07	-.02	.01	-.04
8. Performance A. Self-rated: B. Supervisor: C. WPG <sup>c</sup> :	-.15 <sup>a</sup> .10 -.08	-.09 .06 -.07	.00 .09 -.05	.17 <sup>a</sup> .05 -.06	-.07 -.06 .11 <sup>a</sup>	-.05 -.08 .10 <sup>a</sup>	-.11 .15 <sup>a</sup> .06	-.08 .05 -.11 <sup>a</sup>	-.08 .05 -.11 <sup>a</sup>	.13 <sup>a</sup> -.11 <sup>a</sup> -.01	(.67 <sup>ab</sup> ) .38 <sup>ab</sup> .24 <sup>ab</sup>	.22 <sup>ab</sup> (.65 <sup>ab</sup> ) .21 <sup>ab</sup>	.15 <sup>a</sup> .33 <sup>ab</sup> (.72 <sup>ab</sup> )	.00 .03 -.09	.05 .13 <sup>ab</sup> -.00	-.07 .07 -.06	.04 .17 .02
9. Absence A. Occurrences: B. Days:	-.12 <sup>a</sup> -.02	-.08 -.05	.03 .06	.12 <sup>a</sup> .07	-.04 -.01	-.01 -.01	-.01 .07	.04 .08	.06 .01	.06 .00	.03 -.12	-.00 .05	-.14 <sup>a</sup> -.08	(.51 <sup>ab</sup> ) .59 <sup>ab</sup>	.49 <sup>ab</sup> (.23 <sup>ab</sup> )	.40 <sup>ab</sup> .32 <sup>ab</sup>	-.04 (.21)
10. Tardiness A. Occurrences: B. Minutes:	-.00 -.05	-.09 -.16	.06 .11	.04 .05	.08 .18	.05 .10	.06 -.27 <sup>ab</sup>	.10 -.11	-.02 .02	-.05 .06	.12 -.18	-.14 -.15	-.03 -.03	-.09 -.18	-.08 -.15	(.32 <sup>ab</sup> ) .21	.45 <sup>ab</sup> (.35 <sup>ab</sup> )

<sup>a</sup>p<.05. <sup>ab</sup>p<.01. (one-tailed)

Notes: a. Pretest correlations are in lower diagonal of matrix; posttest correlations are in upper diagonal of matrix.

b. Correlations on diagonal of matrix are test-retest correlations.

c. WPG is an abbreviation for Work Measurement Plan, the company's formal record of performance.



Table 3

## Summary of Tests of Hypotheses

<u>HYPOTHESIS</u>	<u>SITE</u>	<u>SUPPORTED ON</u>	<u>NOT SUPPORTED ON</u>
1	A	Overall Satisfaction Intrinsic Motivation Minutes Tardy	Absence Intent WMP Performance
	B	Absence Occurrence Tardy Occurrence	Overall Satisfaction Intrinsic Motivation Absence Intent
	C	Supervisor-rated Performance Absence Occurrence	
2	A	None	None
	B	Overall Satisfaction Intrinsic Motivation Quit Intent	Supervisor-rated Performance Absence Occurrence
	C	None	Supervisor-rated Performance Self-rated Performance
3	A	None	Absence Intent Quit Intent
	B	None	Quit Intent WMP Performance
	C	Absence Occurrence*	Quit Intent

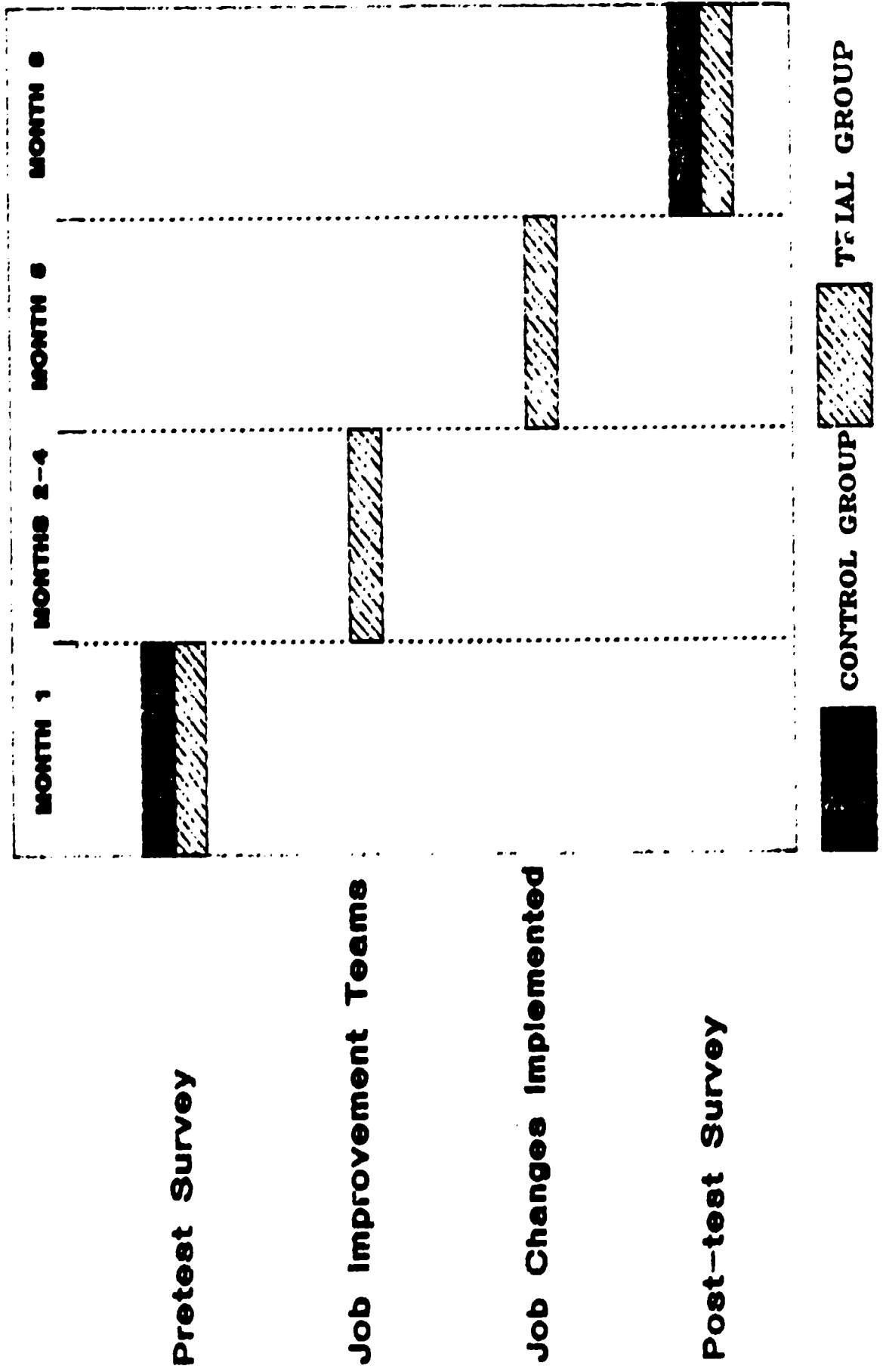
Partial Support

Figure Captions

Figure 1. Summary of study procedure.

Figure 2. Focus of attention measure used in present study.

# SCHEDULE OF ACTIVITIES



**DIRECTIONS:** Below this paragraph we have defined three (3) things which people may think about while at work. At the bottom of the page are three scales. Use these scales to indicate how often you think about each of these things. Please read the description of the JOB, the WORK UNIT, and OFF-THE-JOB factors. After you have read these descriptions, answer each of the three questions at the bottom of the page. Please raise your hand if you would like additional directions.

**DEFINITIONS:**

**JOB FACTORS**

The characteristics of your job (for example, the number and type of activities, variety of skills used, independence of action, feedback from the work itself, significance/importance of the work, and sense of doing a complete job).

**WORK UNIT FACTORS**

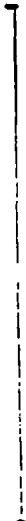
The characteristics of your work unit (for example, the number of people in your work unit, the degree to which work unit members depend on one another for doing the unit's work, the degree to which work unit members can decide how to do the unit's work, the number of different jobs held by members of the work unit, and the degree of the work unit, and the degree to which procedures are spelled out for the work unit and followed).

**OFF-THE-JOB FACTORS**

The characteristics of your off-the-job activities (for example, activities with family, activities with friends, recreational activities and hobbies, volunteer activities and cultural activities).

106. Place a slash across the vertical line to indicate how often you think about job factors while at work.

Almost all  
the time



Almost never

107. Place a slash across the vertical line to indicate how often you think about work unit factors while at work.

Almost all  
the time



Almost never

108. Place a slash across the vertical line to indicate how often you think about off-the-job factors while at work.

Almost all  
the time



Almost never

FOCUS OF ATTENTION AT WORK  
AND LEADER-FOLLOWER RELATIONSHIPS

DONALD G. GARDNER  
University of Colorado-Colorado Springs  
College of Business and Administration  
Box 7150  
Colorado Springs, CO 80933-7150  
(303)593-3356

RANDALL B. DUNHAM  
University of Wisconsin  
School of Business  
1155 Observatory Drive  
Madison, WI 53706  
(608)263-2120

L. L. CUMMINGS  
Northwestern University  
Kellogg Graduate School of Management  
Leverone Hall  
Evanston, IL 60201  
(312)491-3470

JON L. PIERCE  
University of Minnesota-Duluth  
School of Business and Economics  
10 University Drive  
Duluth, MN 55812  
(218)726-7929

Address Correspondence to Donald G. Gardner

*IN PRESS*

Running Head: FOCUS OF ATTENTION

The research reported here was supported by grant number NR 170-959 from the U. S. Office of Naval Research. The assistance of David Greenberger, Peter Scherer, Melissa Mayo, and Brian Klaas is greatly appreciated.

FOCUS OF ATTENTION AT WORK  
AND LEADER-FOLLOWER RELATIONSHIPS

ABSTRACT

Three different studies examine moderating effects of focus of attention at work on leader-follower relationships, using the typology developed by Howell, Dorfman, and Kerr (1986). Survey data were collected from over 1300 subjects. Results indicate that: (1) high focus on the supervisor while at work enhances leader behavior-subordinate satisfaction and behavior relationships, (2) high focus on off-job factors while at work enhances leader behavior-subordinate satisfaction relationships, and (3) high focus on off-job factors while at work weakens leader behavior-subordinate behavior relationships. Theoretical implications for the study of organizational behavior are discussed, as well as practical issues for enhancing leader behavior effectiveness in work organizations.

Recent research on effects of leadership styles in work environments has been reasonably productive (Bass, 1981; House & Baetz, 1979; Jago, 1982). We know, for example, that in certain situations leader emphasis on job-related issues (i.e., initiating structure behavior) results in favorable subordinate reactions. In other situations, a supervisory style characterized by genuine concern for subordinates (i.e., consideration behavior) leads to favorable employee reactions. In still other situations, a combination of these leader behaviors is required to optimize subordinate responses (e.g., Kerr, Schriesheim, Murphy, & Stogdill, 1974).

Understanding of the conditions under which different leader behaviors are effective remains somewhat unclear. This void has led to a search for moderators in the leader behavior-effectiveness paradigm. Indeed, since the publication of Fiedler's (1967) contingency theory of leadership, research on leadership has been dominated by a search for major moderators and contingency factors (House & Mitchell, 1974), that would enable us to predict which specific leadership style will be most effective in a given situation. Examples of such hypothesized moderators include leader-member relations, task structure, and leader position power (Fiedler, 1967); subordinate locus-of-control, authoritarianism, and self-perceived ability (cf. House & Baetz, 1979); "performance-reward climate" (Sheridan, Vredenburgh, & Abelson, 1984); leader "warmth" (Tjosvold, 1984); initial quality of the "leader-member exchange" (Scandura & Graen, 1984); and follower needs and dependencies, degree of task

structure, motivating properties of tasks, task pressure, job level, follower expectations, and leader upward influence (cf. Jago, 1982).

Theoretical and empirical interest in moderators of leader behavior-subordinate reaction relationships is important for at least two reasons. First, by specifying boundary conditions under which certain relationships occur in the workplace, it enhances our understanding of human behavior in organizations. Second, at a more practical level, the identification of major contingencies can benefit management by highlighting the conditions under which various leader behaviors will be most effective. This would permit matching supervisors to existing situations, work conditions could be redesigned to match existing leaders (Fiedler, 1967), or supervisors could be trained to diagnose situational demands and adapt their leadership style to the existing situation (House & Mitchell, 1974).

Moderator research has been successful in identifying some of the factors that determine whether a given leader or leadership style will be effective. For example, Peters, Hartke, and Pohlmann, (1985), and Strube and Garcia (1981) have reviewed research on Fiedler's contingency theory and concluded that several aspects of that theory have empirical verification. On the other hand, much of the research of this type has been "unsystematic ... and has yielded either equivocal or conflicting results" (Howell, Dorfman, & Kerr, 1986, p. 88). Howell et al. attribute much of this lack of success to the fact that researchers have preoccupied themselves with typologies or classifications of moderating variables (e.g., task and individual characteristics) instead of concentrating on the processes through



which moderators might operate. They theorized that most moderators can be classified as: (1) enhancing (strengthening) or neutralizing (weakening) leader behavior-subordinate reaction relationships, (2) acting as a substitute or supplement to leader behaviors, and/or (3) not really being a moderator, but instead acting as a mediator in the leader behavior-dependent variable relationships.

The three studies in the present paper explore potential moderators of leader behavior-subordinate reaction relationships using the typology developed by Howell et al. (1986). That is, the present studies address the questions of why moderation of leader behavior effects occur and what underlying psychological mechanisms are operating. The present studies thus address important research needs highlighted by Howell et al. (1985).

In addition, the present studies augment the theoretical and empirical work begun by Gardner, Dunham, Cummings, and Pierce (1986), Gardner, Cummings, Dunham, and Pierce (1986), Gardner, Pierce, Dunham, and Cummings (1985), and Dunham, Gardner, Pierce, and Cummings (1985). In that research program the concept of employee focus of attention at work was hypothesized to be and was empirically confirmed as a moderator of several work environment-worker reaction relationships.

Focus of attention at work is defined as the degree to which employees think about specific aspects of their work and non-work lives while they are at work. Both the direction and intensity of employee focus of attention are considered. It has been found that the more employees focus on a particular aspect of their work environment, and the less they focus on other factors, the stronger

their reactions to that particular aspect of their work. Employee focus of attention on various targets has both "trait" and "state" components. There is a significant amount of minute-by-minute variation in an employee's focus of attention (the "state" component). However, employees are also reasonably consistent in reporting categories of events they think about while they are at work (Gardner, Dunham et al., 1986; the "trait" component). This is especially true in the absence of major organizational changes, which is typical of most employees' jobs. It is this characteristic, or trait, component in which we are most interested, because it allows better predictions about other characteristic employee attitudes (e.g., job satisfaction) and behaviors (e.g., job performance level).

Gardner et al. (1985) showed that the more employees focus on their jobs, the more strongly they react to characteristics of their jobs. Dunham et al. (1985) showed that the more employees focus on their work unit, the more strongly they react to characteristics of their work unit. These two studies also found that the more employees focus on factors off the job, the less they reacted to variation in work environment characteristics. Tying these findings to the typology developed by Howell et al. (1986), we hypothesize that the more employees focus on (think about) their supervisors, the more strongly they will react to their supervisor's leadership behaviors. That is, high focus on supervision enhances the strength of leader behavior-subordinate response relationships. Further, the more employees focus on off-job (non-supervisor) factors, the less they will react to their supervisor's behaviors. That is, off-job focus

will operate as a neutralizer of leader behavior-subordinate response relationships. Note that in the present study we are primarily interested in the degree to which focus of attention changes the relationships between leader behaviors and subordinate responses. We are not concerned here with the dynamic antecedent, consequent, and/or reciprocal causative relationships between focus of attention and leader behaviors per se (cf. Gardner, Dunham, et al., 1986). The organizations in the present study were in states of sufficient equilibrium that we could examine stabilized relationships between leader behaviors and subordinate attitudes and behaviors.

There is another reason why we believe focus of attention will moderate leader behavior relationships. Gardner, Dunham et al. (1986) showed that characteristics of employees determine in part what is focused on at work, while in another study Gardner, Cummings et al. (1986) showed that characteristics of the work environment itself have a causal influence on what is, and what is not, focused on by employees while they are at work. We believe that many of the consistent moderators found in prior research may in fact be due to their causal impact on what is focused on at work. For example, Fiedler (1967) posits that task structure moderates the effectiveness of leader behaviors. Task structure could conceivably have its moderating effect through focus of attention. A highly structured task might cause high off-job focus among some subordinates, particularly those desiring autonomy and variety in their work (cf. Gardner, Pierce, et al., 1985), resulting in their leader's behaviors having less effect on those subordinates because they are distracted

from what the leader is doing. Similar arguments could be made for other hypothesized moderators (e.g., high position power leads to high focus on supervisors). We believe that applying the focus of attention concept to leadership research helps overcome the "dearth of new activity" noted by Schneider (1985).

In sum, we believe focus of attention at work will affect the degree to which variation in leader behaviors influence subordinates. The more subordinates focus on their leaders at work, and the less they focus on factors away from work, the more their leader's behaviors should affect them. The present studies examine the two most-researched leadership styles (initiating structure and consideration; Stogdill, 1974) in three different samples. The specific hypotheses tested were:

H1. Off job focus will moderate the relationships between perceived leader initiating structure and subordinate responses such that relationships are neutralized (weakened) for high off-job focus employees.

H2. Off-job focus will moderate the relationships between perceived leader consideration and subordinate responses such that relationships are neutralized (weakened) for high off-job focus employees.

H3. Focus on supervision will moderate the relationships between perceived leader initiating structure and subordinate responses

such that relationships are enhanced (augmented) for employees whose attention is strongly focused on the behaviors of their supervisor.

H4. Focus on supervision will moderate the relationships between perceived leader consideration and subordinate responses such that relationships are enhanced (augmented) for employees whose attention is strongly focused on the behaviors of their supervisor.

Together, these four hypotheses specify that "appropriate" leader behaviors for a particular situation will be relatively ineffective unless employee focus of attention is directed toward this behavior of the leader and away from such distracting factors as off-job activities. At the same time, it is hypothesized that "inappropriate" leader behaviors will be quite dysfunctional when attention is focused on the leader, but less dysfunctional when the attention of followers is directed away from the leader.

It should be noted that focus of attention is a developing concept (Gardner, Dunham et al., 1986). The three studies reported below are described in the chronological order in which they were conducted and reflect development of the construct over that time span. Hypotheses 1 and 2 are tested in all three samples. Since the supervisor focus concept had not yet been developed prior to studies one and two, Hypotheses 3 and 4 are tested only in study three.

## METHOD

## Samples and Procedures

## Study 1

Employees of a large midwest (U. S.) insurance company (N=430) completed a survey on company time. Respondents were primarily female (78%) and represented 19 different functional work units of the company (e.g., legal counsel, communications, policies, claims). Over 90% of those asked to participate in the survey did so, and over 90% of the participants signed their names to the surveys allowing us to match their data to their work unit supervisors.

## Study 2

Employees of a large midwest (U. S.) insurance company (a completely different company than in study 1) completed surveys on company time (N=76). Over 95 % of the employees asked to participate did so voluntarily, and over 95 % of participants signed their names to their questionnaires. Subjects performed clerical functions in the policy services, claims, and underwriting departments of the company.

## Study 3

Employees of a midwestern (U. S.) chapter of an automobile services club (N=492) completed surveys on company time. Over 95 % of those asked to participate did so, and over 90 % of participants signed their names to their questionnaire. Jobs performed ranged from telemarketing to the highest levels of management.

### Leader Behavior Measure

#### Studies 1, 2, and 3

Leadership styles. Perceived initiating structure and consideration were measured with the 20-item Leader Behavior Description Questionnaire Form XII (Stogdill, 1963).

### Focus of Attention Measure

#### Study 1

Off-job focus was measured with a scale developed by Gardner, Dunham et al. (1986) and described by Gardner, Pierce et al. (1985). Subjects were asked how much they thought about "the characteristics of your off-the-job activities (e.g., activities with family, activities with friends, recreational activities and hobbies, volunteer activities, and cultural activities)", while they were at work. Subjects responded on a 5 cm vertical line, anchored by "almost all the time" at the top and "almost never" at the bottom, by placing a "peel-off, stick-on" label (with "off-job factors" printed on it) on the scale. Scores were derived with a 20-point equal interval scale (0=almost never, 20=almost all the time), which reflected how far up the scale subjects placed their off-job stick-on label. This unusual scale format was chosen to reduce common methods problems that arise when Likert-type scale items are correlated with other Likert-type scale items. An additional advantage of this format is that scores may be expressed two ways: (1) as a raw score with the 20-point scale as units, and (2) as a proportion or percent of total Time spent focusing on the targets examined in this study (the score for off-job

focus is divided by the total of scores for the respondent.)<sup>1</sup> Thus, for example, an average of .10 implies that of the total amount of time thinking about the a priori targets measured in this study, 10% of that time was spent thinking about off-job factors.

### Study 2

Off-job focus of attention was measured with a scale almost identical to that used in study 1. Two differences are that the vertical line was longer (13 cm versus 5 cm) and that subjects put a slash across the vertical line to indicate their response to the off-job focus definition (versus a peel-off, stick-on label). The definition of off-job focus was identical to that used in study 1. A 50-point equal interval scale was used to quantify the raw focus scores (0=almost never, 50=almost all the time). Focus percent scores were derived as described for study 1.

### Study 3

The focus of attention measures used in studies 1 and 2 were further refined for study 3. The format was preserved: Subjects indicated the degree to which they focused on a particular target by marking a slash across a 4 cm line, anchored by "almost never" and "almost all the time." The targets themselves were defined more specifically, resulting in more targets than were used in studies 1 and 2. Off-job focus was partitioned into focus on: (1) family and friends, (2) personal business activities, and (3) recreational activities. In addition, supervision was added as a target to explore



the hypothesis that focus on supervision will enhance leader behavior-subordinate response relationships.<sup>2</sup> As with studies 1 and 2, both raw and percent focus scores were used.

### Dependent Variable Measures

#### Study 1

**Job satisfaction.** The short form of the Minnesota Satisfaction Questionnaire (Weiss, Dawis, England, & Lofquist, 1967) was used to measure overall job satisfaction.

**Intrinsic motivation.** This variable was measured with the four-item scale developed by Hackman and Lawler (1971)

**Performance/effort.** Supervisors rated performance and effort of their subordinates, on a one page questionnaire administered separately from the broader survey. Performance was the sum of ratings on four dimensions (quality, quantity, dependability, and overall performance). To assist supervisors in differentiating performance from effort, the following was provided to supervisors before they rated effort:

The amount of effort an employee expends on job performance is not always reflected in the quality of the employee's job performance. Thus, you are being asked to evaluate effort separately from performance.

Effort and performance were both measured by using a five-point scale where 1="well below average" and 5="well above average." Ratings were obtained twice (separated by six weeks) to assess reliability of measurement. Correlations between time I and time II were .74 for

performance and .66 for effort. Although many might consider these to be adequate retest reliabilities, we chose the approach of analyzing the measures separately. If the instability reflected in these coefficients are due to systematic changes in performance and effort, we wanted to be able to examine these changes. It is of course possible that these correlations are true reliability estimates.

### Studies 2 and 3

Job satisfaction. Items for all subscales of the short form of the Index of Organizational Reactions (Dunham, Smith, & Blackburn, 1977; Smith, 1976) were summed to provide an overall job satisfaction index. The supervision satisfaction subscale was analyzed separately because of its relevance to the predictor variables.

Intrinsic motivation. The four-item measure developed by Hackman and Lawler (1971) was used to measure intrinsic motivation.

Behavioral intentions. Intentions to attend work and to stay with the employer (i.e., not quit) were measured with four items, two for each intention. Subjects indicated the degree to which they agreed with the following statements: (1) "I often think about quitting my job", (2) "I expect to quit my job within the next three years", (3) "I often think about not coming to work", and (4) "I expect to be absent from work at least once in the next two months." Items 1 and 2 were added to form the stay intent measure, while items 3 and 4 were added to form the attendance intent measure.<sup>3</sup>

Performance. For study 2, supervisors rated their subordinates using a single-item, five-point, very good to very poor scale. While

single-item measures of performance are not psychometrically ideal, it is all that the research site would allow. Such a scale is preferred to a self-report scale, or choosing to ignore performance as a dependent variable.

For study 3, performance data were gathered from the organization's formal appraisal of two major categories of employees in the research site: (1) non-exempt (who received an hourly wage), and (2) telemarketing (who received an hourly wage plus a commission for memberships sales). These data were gathered from company records and were the performance measures used in making personnel decisions (e.g., salary increases). The nonexempt performance measure used in analyses was the sum of ratings on eight dimensions: knowledge, quality, quantity, initiative, dependability, adaptability, cooperation, and attitude. Each of these ratings anchors was thoroughly defined for supervisor-raters to clarify the link to job performance of ratees. We feel this measure is weakened by its incorporation of seemingly non-performance-related factors (e.g., attitude). This was, however, the only organizational measure of performance available to us for these employees. We believe it is adequate for our purposes. It is also the case that to the employees in this organization this measure of performance represented what their management expected and communicated to them in terms of real performance expectations, despite psychometric imperfections. The performance measure used for telemarketers was average dollar club membership sales per hour during the most recent performance review period.

Tardiness. For study 2 only, the company maintained records of the frequency of tardiness incidents, as well as the total number of minutes tardy. These data were gathered from personnel records and were converted to an average monthly rate.

### Data Analyses

Hierarchical multiple regression analyses were performed to test all the moderator variable hypotheses, in all three studies reported here (cf. Cohen & Cohen, 1975; Stone & Hollenbeck, 1984). To be conservative, protected t-tests were used (Cohen & Cohen, 1975, pp. 162-165). Significant interactions were interpreted by plotting leader behavior-dependent variable relationships separately for high and low focus employees. Analyses were conducted with both the raw and percent scores discussed above. When raw and percent focus scores produced similar significant interactions (i.e., redundant information), only the raw score interaction is presented.<sup>4</sup>

## RESULTS

### Study 1

Table 1 presents averages (means), standard deviations (SD), reliability estimates, and intercorrelations of Study 1 variables.

---

Insert Table 1 about here

---

Hypothesis 1 predicted interactions of off-job focus and perceived initiating structure on the study's dependent variables.

Four significant, non-redundant interactions were obtained on: satisfaction ( $\Delta R^2 = .03$ ,  $p < .01$ , 413 df) and intrinsic motivation ( $\Delta R^2 = .01$ ,  $p < .05$ , 411 df) with raw focus scores, and on performance Time I ( $\Delta R^2 = .01$ ,  $p < .05$ , 341 df) and effort Time I ( $\Delta R^2 = .01$ ,  $p < .05$ , 338 df) with focus percent scores. The first two interactions contradicted Hypothesis 1: The relationships between initiating structure and motivation/satisfaction were positive for high off-job focus employees, and near-zero for low off-job focus employees. The interactions on performance and effort, however, were as hypothesized: Positive relationships between performance/effort and initiating structure for low off-job focus employees, and slight negative relationships for high off-job focus employees. Thus, Hypotheses 1 was supported on performance measures, but not on self-report (affective) ones.

Hypothesis 2 predicted interactions of off-job focus and perceived leader consideration on the study's dependent variables. Hypothesis 2 was not supported, as there were no significant interactions of off-job focus and leader consideration.

## Study 2

Table 2 presents averages (means), standard deviations (SD), reliability estimates, and intercorrelations of Study 2 variables.

---

Insert Table 2 about here

---

Hypothesis 1 predicted interactions of off-job focus and initiating structure on the study's dependent variables. Four significant interactions were obtained on: stay intent ( $\Delta R^2 = .02$ ,  $p < .01$ , 433 df) and attendance intent ( $\Delta R^2 = .01$ ,  $p < .05$ , 435 df) with raw focus scores, and supervision satisfaction ( $\Delta R^2 = .01$ ,  $p < .01$ , 426 df), and minutes tardy ( $\Delta R^2 = .14$ ,  $p < .01$ , 74 df) with focus percent scores. The latter two interactions supported Hypothesis 1: (1) the relationship between supervision satisfaction and initiating structure was stronger for low off-job focus employees than high, and (2) the relationship between initiating structure and tardiness was positive for high off-job focus employees and negative for low off-job focus employees. These interactions indicate that off-job focus is a neutralizer, as hypothesized. The interactions on stay and attendance intent were opposite to predictions: a positive relationship for high off-job focus employees and near-zero for low off-job focus employees.

Hypothesis 2 predicted interactions of off-job focus and consideration on the study's dependent variables. Four significant interactions were obtained on: overall satisfaction ( $\Delta R^2 = .02$ ,  $p < .01$ , 421 df), intrinsic motivation ( $\Delta R^2 = .01$ ,  $p < .05$ , 433 df), stay intent ( $\Delta R^2 = .02$ ,  $p < .01$ , 433 df), and attendance intent ( $\Delta R^2 = .03$ ,  $p < .01$ , 434 df), all with raw focus scores. All four interactions were consistent when interpreted: strong positive consideration-dependent variable relationships for high off-job focus employees, and slight positive or zero relationships for low off-job focus employees. This pattern of results is opposite to predictions and thus Hypothesis 2 received no support.

## Study 3

Table 3 presents averages (means), standard deviations (SD), reliability estimates, and intercorrelations of Study 3 variables. Because measures of the three off-job targets (viz., family/friends, personal business, and recreational) were so highly intercorrelated ( $r$ 's greater than .85), scores for these targets were averaged to form an off-job focus index. This index is very similar to the off-job focus measure used in studies 1 and 2, because it includes the same factors described in the original off-job focus measure.

---

Insert Table 3 about here

---

Hypothesis 1 predicted interactions of off-job focus and initiating structure on the study's dependent variables. Two significant interactions were obtained with focus percent scores on: intrinsic motivation ( $\Delta R^2 = .02$ ,  $p < .01$ , 428 df), and attendance intent ( $\Delta R^2 = .02$ ,  $p < .01$ , 429 df). The interaction on motivation was as predicted: The relationship between initiating structure and motivation was strong positive for low off-job focus employees, and near-zero for high off-job focus employees. The interaction on attendance intent was opposite to predictions: The relationships between initiating structure and attendance intent was positive for high off-job focus employees, and near-zero for low off-job focus employees. Thus, Hypothesis 1 received mixed support.

Hypothesis 2 predicted interactions of off-job focus and consideration on the study's dependent variables. Five significant interactions were obtained with raw focus scores on: supervisor satisfaction ( $\Delta R^2=.01$ ,  $p<.05$ , 424 df), overall satisfaction ( $\Delta R^2=.02$ ,  $p<.01$ , 409 df), attendance intent ( $\Delta R^2=.01$ ,  $p<.05$ , 427 df), intrinsic motivation ( $\Delta R^2=.03$ ,  $p<.01$ , 427 df), and dollar sales for telemarketers ( $\Delta R^2=.04$ ,  $p<.05$ , 102 df). The interaction on intrinsic motivation was as hypothesized: The relationship between consideration and motivation was strongly positive for low off-job focus employees, and near-zero for high off-job focus employees. The interactions on satisfaction, and attendance intent were contrary to predictions: The relationships between consideration and satisfaction/attendance intent were more positive for high off-job focus employees than low off-job focus employees. The remaining interaction was ambiguous vis-a-vis Hypothesis 2: The relationship between consideration and dollar sales was strongly negative for high off-job focus telemarketers, and slightly positive for low off-job focus telemarketers. The relationship between consideration and performance was not only neutralized for high off-job focus employees, it was reversed from the direction expected from prior research. Altogether, Hypothesis 2 received mixed support.

Hypothesis 3 predicted interactions of supervisor focus and initiating structure on the study's dependent variables. Two significant interactions were obtained on: overall satisfaction ( $\Delta R^2=.01$ ,  $p<.05$ , 420 df) with raw focus scores, and attendance intent ( $\Delta R^2=.01$ ,  $p<.05$ , 429 df) with focus percent scores. Both



interactions supported Hypothesis 3: The relationship between initiating structure and satisfaction/attendance intent was more positive for high supervisor focus employees than for low supervisor focus employees. A similar supportive, significant interaction was found for non-exempt performance, but did not pass the protected t-test criterion. Overall, Hypothesis 3 was supported.

Hypothesis 4 predicted interactions of supervisor focus and consideration on the study's dependent variables. Three significant interactions were obtained with raw focus scores on: attendance intent ( $\Delta R^2 = .02$ ,  $p < .01$ , 423 df), stay intent ( $\Delta R^2 = .01$ ,  $p < .05$ , 430 df), and non-exempt performance ( $\Delta R^2 = .05$ ,  $p < .01$ , 169 df). All three interactions consistently supported Hypothesis 4: The relationships between consideration and intentions/performance were more positive for high supervisor focus employees than low supervisor focus employees.

Table 4 summarizes results from tests of hypotheses from all three studies.

---

Insert Table 4 about here

---

## DISCUSSION

There were four hypotheses in the present studies. First, it was hypothesized that focus on off-job factors would distract employees from their leader's behaviors, resulting in weak responses to those behaviors. In terms of the Howell et al. (1986) typology, we predicted that off-job focus would act as a neutralizer of leader

behavior-dependent variable relationships. Of the 10 significant interactions that address the hypothesis with respect to initiating structure (H1), confirmation was evenly split: five interactions supported the hypothesis, and five did not. Interestingly, of the five supportive (neutralizer) interactions, three were on performance measures and a fourth was on motivation to perform. All of the non-supportive (enhancer) interactions were on self-report measures. It seems as if high off-job focus employees respond favorably to initiating structure in terms of self-report variables, but not actual performance. For example, highs report greater attendance intent than lows when they perceive high initiating structure. Yet, they are actually more tardy than low off-job focus employees when initiating structure is high. That is, the behavior of high off-job focus employees did not match their self-reports.

We are not sure why source of dependent variable (viz., self-report versus supervisors and personnel records) caused a divergence in results. If common methods bias was the cause then we would expect positive results on self-report measures, not performance measures. Perhaps high off-job focus employees like to receive direction at work because it makes it easier for them to continue focusing on off-job factors. That is, high initiating structure leaders make it easier for these employees to "safely" think about off-job events. Because the supervisor is instructing them in what has to be done (perhaps as a response to their low performance) high off-job focus employees can think less about their work and more about non-job factors (their supervisor does their "job thinking" for them). It may also be that a

facet of the work environment that facilitates high off-job focus employees' freedom to think about off-job factors will result in a positive affective response by them to that facet.

Variation in the nature of significant results may also be affected to some degree by reciprocal causation between initiating structure and off-job focus. For example, a supervisor might perceive a high off-job focus employee as "daydreaming", and manifest initiating structure behaviors in response to that perception. Although such relationships are expected, the two constructs (focus on the leader and leader behavior) are sufficiently independent to merit the importance of treating them as separate constructs. Consider, for example, that a subordinate might focus a great deal of attention on a leader because the leader is a very positive factor in the workplace or because the leader is a very negative factor. Although the behavior of the leader is clearly going to influence focus in either case (i.e., the two are not independent) we think the importance of examining both focus and leader behavior should be clear. Relatedly, we also expect that high levels of initiating structure increases focus on the leader. However, the major purpose of initiating structure is not to focus attention on the leader but rather to focus attention on the task (i.e., to tell subordinates the "who, what, when, and where" of their jobs). Despite the fact that high initiating structure could cause higher leader focus among subordinates, the major goal of the present paper was to examine the moderating consequences of focus, not the antecedents. Moreover, in our data analyses, such main effects are statistically controlled in

the first step of the hierarchical regression analyses. We believe that the results indicate that if subordinates are not focusing sufficiently on the behavior of their leader, they are less likely to perceive and react to the level of initiating structure offered by the leader.

Hypothesis 2 clearly was not supported. Eight out of nine significant interactions that address H2 indicate that high off-job focus enhances consideration-dependent variable relationships, opposite to what was predicted. Seven of the eight contradictory interactions were on self-report measures. Consideration-subordinate self-report (satisfaction) relationships were stronger for high off-job focus employees than low off-job focus employees. Like initiating structure, consideration did not help performance of high off-job focus employees. The latter result would be predicted from path-goal theory (House & Mitchell, 1974), in situations where consideration is not made contingent upon high performance. It is also likely that, like initiating structure, there is some reciprocal causation in focus--leader behavior relationships. Overall, though, we are not sure why high off-job focus employees react so favorably to leader consideration behaviors. We offer two interpretations as reasonable explanations for our results, with the understanding that only future research can verify these explanations. First, perhaps many of the consideration behaviors of supervisors are associated with thoughts of off-job events/factors/people. For example, when a supervisor inquires about a subordinate's spouse, this is defined as a consideration behavior, but it also calls up thoughts of an off-job

person (the spouse). If off-job events are perceived as pleasant by the high off-job focus employee (cf. Gardner, Dunham et al., 1986), then highs may also react positively toward the supervisor (response generalization). Second, given that high off-job focus employees are generally disaffected with their work environment (see correlations in Tables 1 through 3) and perceive most facets of the work environment as being undesirable (Gardner, Pierce et al., 1985), they may be relatively sensitive to considerate leader behaviors because of some type of contrast effect. That is, if high leader consideration is perceived as one of the few positive aspects of the work environment, it may cause relatively stronger reactions for high off-job focus employees than low off-job focus employees (who perceive that other facets of the work environment are also favorable). Hopefully other researchers will explore this unexpected, but consistent, set of results.

Significant results relevant to Hypotheses 3 and 4 were all supportive. Strong focus on one's supervisor enhances (increases) the impact of that supervisor's behaviors on his/her subordinates. This is consistent with our earlier research, which suggests that strong focus on a particular facet of the work environment increases the potential impact of that facet. Results of prior studies from three different samples emphasize the importance of directly assessing focus on that particular aspect of the work environment which is under study. Significant and supportive results are obtained with much higher frequency and consistency when the focus target being measured is "isomorphic" with other independent variables under study. In

study 3, for example, to understand how employees react to leader behaviors it is important to directly measure the degree to which employees focus upon the behavior of the leader, versus some global definition like "on the job." Thus when we used a more direct, precise focus measure, we obtained more powerful results.

The finding that focus on the supervisor moderates reactions to leader behaviors has significant theoretical implications. It supports the hypothesis that focus of attention affects how other work environment variables (e.g., task complexity) exert their effects on leader behavior-subordinate response relationships. If other variables in the work environment, including individual differences, act to increase or decrease focus on the supervisor, then concomitant increases or decreases in leader behavior effects can be expected. High levels of role ambiguity, for example, might motivate an employee to strongly focus on his/her supervisor.

These findings also have practical implications. Inappropriate leader behavior will cause less adverse employee reactions for employees with low leader focus. This might be a situation in which an organization should choose to utilize a "substitute for leadership" (Kerr, 1977; Kerr & Jermier, 1978). Appropriate leader behavior will be more effective for employees with high leader focus. This implies that when an organization trains its supervisors to display appropriate behaviors, the organization may also want to try to increase subordinates focus on leadership, or the full potential of the improved supervisory behavior may not be realized. On a short term basis, high leader focus will help employees recognize that

changes have occurred in leader behavior. On a longer term basis, high levels of focus on leader behavior should facilitate strong favorable reactions to the improved leader behavior. Ways in which temporary high supervisor focus might be accomplished (before, during, and after competent training) include: (1) advertising the training to subordinates, (2) incorporating subordinate suggestions into training program content, (3) communicating training goals and content to subordinates, (4) involving subordinates in training evaluation, (4) training supervisors to not only exhibit initiating structure/consideration behaviors, but also to draw subordinate attention to them, and (5) having leaders hold meetings with subordinates to explain the training which they received. Future applied research on leadership training is needed to fully assess whether these suggestions do indeed augment leadership training effectiveness.

## ENDNOTES

1. The other targets of attention that were measured in studies 1 and 2 but are not analyzed here are job and work unit. Off-job focus percent is:  $\text{off-job}/(\text{job}+\text{work unit}+\text{off-job})$ .
2. The other targets measured in this study were: job, coworker, work unit, organization, technology, and "nothing." All ten targets were used in computing focus percent scores.
3. Although our focus and behavioral intentions measures both include "think about" aspects, correlational patterns shown in Tables 2 and 3 suggest that they represent distinct constructs.
4. Because of a significant experience effect for telemarketers in Study 3, performance of only those employees with more than five hours experience were analyzed. Also, because of non-equivalence of measures across the two employee groups, tests of hypotheses were conducted separately.



## REFERENCES

- Bass, B. M. (1981). Stogdill's handbook of leadership. Revised and expanded edition. New York: Free Press.
- Cohen, J. and Cohen, P. (1975). Applied multiple regression/correlation analysis for the behavioral sciences. New Jersey: Erlbaum.
- Dunham, R. B., Gardner, D. G., Cummings, L. L., and Pierce, J. L. (1985). The direct and interactive effects of focus of attention and work-unit structure on worker effectiveness. American Institute for Decision Sciences Proceedings 1985, 646-648.
- Dunham, R. B., Smith, F. J., and Blackburn, R. S. (1977). Validation of the Index of Organizational Reactions with the JDI, the MSQ, and the Faces scales. Academy of Management Journal, 20, 420-432.
- Fiedler, F. (1967). A theory of leadership effectiveness. New York: McGraw-Hill.
- Gardner, D. G., Cummings, L. L., Dunham, R. B., and Pierce, J. L. (1986, March). Focus of attention and organizational effectiveness: A longitudinal study Paper presented at the annual meeting of the Western Academy of Management, Reno.
- Gardner, D. G., Dunham, R. B., Cummings, L. L., and Pierce, J. L. (1986). Focus of attention at work: Construct definition and empirical validation. Manuscript under review.
- Gardner, D. G., Pierce, J. L., Dunham, R. B., and Cummings, L. L. (1985, August). Focus of attention at work and reactions to

work experiences. Paper presented at the annual meeting of the Academy of Management, San Diego.

Hackman, J. R. and Lawler, E. E. (1971). Employee reactions to job characteristics. Journal of Applied Psychology, 80, 159-170.

House, R. J., and Baetz, M. L. (1979). Leadership: Some empirical generalizations and new research directions. In B. M. Staw (Ed.), Research in organizational behavior (Vol. 1). Greenwich, CT: JAI Press.

House, R. J., and Mitchell, T. R. (1974). Path-goal theory of leadership. Journal of Contemporary Business, 5, 81-97.

Howell, J. P., Dorfman, P. W., and Kerr, S. (1986). Moderator variables in leadership research. Academy of Management Review, 11, 88-102.

Jago, A. G. (1982). Leadership: Perspectives in theory and research. Management Science, 28, 315-336.

Kerr, S. (1977). Substitutes for leadership: Some implications for organizational design. Organization and Administration Sciences, 8, 135-146.

Kerr, S. and Jermier, J. (1979). Substitutes for leadership: Their meaning and measurement. Organizational Behavior and Human Performance, 22, 375-403.

Kerr, S., Schriesheim, C. A., Murphy, J., and Stogdill, R. M. (1974). Toward a contingency theory of leadership based upon consideration and initiating structure literature. Organizational Behavior and Human Performance, 12, 62-82.

- Peters, L. H., Hartke, D. D., and Pohlmann, J. T. (1985). Fiedler's contingency theory of leadership: An application of the meta-analysis procedures of Schmidt and Hunter. Psychological Bulletin, 97, 274-285.
- Scandura, T. A. and Graen, G. B. (1984). Moderating effects of initial leader-member exchange status on the effects of a leadership intervention. Journal of Applied Psychology, 69, 428-436.
- Schneider, B. (1985). Organizational behavior. In M. R. Rosenzweig and L. W. Porter (Eds.), Annual review of psychology (Vol. 36). Palo Alto, CA: Annual Reviews Inc.
- Sheridan, J. E., Vredenburg, D. J., and Abelson, M. A. (1984). Contextual model of leadership influence in hospital units. Academy of Management Journal, 27, 57-76.
- Smith, F. J. (1976). The index of organizational reactions. JSAS Catalog of Selected Documents in Psychology, 8, MS. # 1265.
- Stogdill, R. M. (1963). Manual for the leader behavior description questionnaire. Columbus: The Ohio State University Bureau of Business Research.
- Stogdill, R. M. (1974). Handbook of leadership: A survey of theory and research. New York: Free Press.
- Stone, E. F. and Hollenbeck, J. R. (1984). Some issues associated with the use of moderated regression. Organizational Behavior and Human Performance, 34, 195-213.
- Strube, J. J. and Garcia, J. E. (1981). A meta-analytic investigation

of Fiedler's model of leadership effectiveness. Psychological Bulletin, 80, 307-321.

Tjosvold, D. (1984). Effects of leader warmth and directiveness on subordinate performance on a subsequent task. Journal of Applied Psychology, 69, 422-427.

Weiss, D. J., Dawis, R. V., England, G. W., and Lofquist, L. H. (1967). Manual for the Minnesota Satisfaction Questionnaire. Minneapolis: University of Minnesota, Industrial Relations Center, Work Adjustment Project.

TABLE 1

Descriptive Statistics and Intercorrelations of Study 1 Variables

Variable	Mean	SD	1	2	3	4	5	6	7	8	9
Off-job focus -											
1. Raw	10.00	4.76	1.00								
2. Percent	.27	.12	.91**	1.00							
3. Initiating Structure	3.39	.75	-.16**	-.19**	(.90)						
4. Consideration	3.72	.62	-.01	-.08	.50**	(.83)					
5. Job Satisfaction	3.53	.59	-.36**	-.41**	.59**	.26**	(.90)				
6. Intrinsic Motivation	4.13	.55	-.21**	-.27**	.23**	.14**	.48**	(.74)			
7. Performance I	3.28	.81	-.22**	-.17**	.04	-.07	.14**	.02	(.85)		
8. Effort I	3.25	.96	-.13**	-.07	.10*	.03	.18**	.11*	.63**	1.00	
9. Performance II	3.37	.80	-.18**	-.17**	-.00	-.09	.13*	.06	.74**	.49**	(.83)
10. Effort II	3.29	.97	-.07	-.06	.06	-.02	.20**	.15**	.44**	.66**	.56**

Note 1. Reliability estimates (coefficient alpha) appear on diagonal in parentheses where appropriate

\*  $p < .05$ \*\*  $p < .01$

TABLE 2

## Descriptive Statistics and Intercorrelations of Study 2 Variables

Variable	SD	1	2	3	4	5	6	7	8	9	10
Off-job-focus -											
1. Raw	13.70	1.00 <sup>1</sup>									
2. Percent	.15	.80**	1.00								
3. Initiating Structure	.62	-.02**	-.02**	(.88)							
4. Consideration	.62	-.04	-.04	.51**	(.89)						
5. Satisfaction	.51	-.20**	-.21**	.41**	.57**	(.91)					
6. Intrinsic Motivation	.57	-.19**	-.26**	.23*	.14**	.32**	(.75)				
Intentions -											
7. Attendance	.91	-.32**	-.30**	.18**	.23**	.46**	.23**	(.60)			
8. Stay	1.07	-.26**	-.28**	.22**	.34**	.59**	.28**	.63**	(.77)		
9. Performance	.76	-.06	-.08	-.03	.11*	.15**	.05	.11*	.10	1.00	
Tardiness -											
10. Number	.10	.08	.05	-.14	.15	.06	.10	.05	.02	-.14	1.00
11. Minutes	2.30	.18	.10	-.10	.01	-.27**	-.11	-.06	-.02	-.15	.21**

Note 1. Reliability estimates (coefficient alpha) appear on diagonal in parentheses where appropriate

\*  $p < .05$

\*\*  $p < .01$

TABLE 3

## Descriptive Statistics and Intercorrelations of Study 3 Variables

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11
Supervisor focus -													
1. Raw :	22.87	10.15	1.00										
2. Percent :	.12	.05	.85**	1.00									
Off-job focus -													
3. Raw :	12.64	8.14	.15**	-.14**	1.00								
4. Percent :	.06	.03	-.03	-.20**	.93**	1.00							
5. Initiating Structure :	3.69	.71	.29**	.28**	-.01	-.05	(.88)						
6. Consideration :	3.53	.81	.27**	.26**	-.01	-.03	.67**	(.90)					
7. Satisfaction :	3.48	.56	.12**	.09*	-.06	-.12**	.39**	.48**	(.83)				
8. Intrinsic Motivation :	4.30	.66	.11**	.08	-.04	-.09*	.14**	.14**	.24**	(.70)			
Intentions -													
9. Attendance :	3.97	.92	.03	.03	-.27**	-.31**	.11**	.11**	.35**	.19**	(.62)		
10. Stay :	3.35	1.09	.10*	.09*	-.17**	-.21**	.25**	.30**	.61**	.21**	.50**	(.73)	
Performance -													
11. Non-exempt :	3.80	.47	-.11	-.05	-.16*	-.16*	-.08	.00	.07	.02	.04	.08	(.81)
12. Tele-marketing :	6.14	5.53	.09	.16*	-.11	-.15	.09	-.14	.07	.03	.03	.06	NA

Note 1. Reliability estimates (coefficient alpha) appear on diagonal in parentheses where appropriate

\*  $p < .05$ \*\*  $p < .01$



## Organizational Commitment: Pre-Employment Propensity and Initial Work Experiences

Jon L. Pierce

*University of Minnesota, Duluth*

Randall B. Dunham

*University of Wisconsin, Madison*

*This study tracked the development of organizational commitment from a pre-employment period through the first three months of employment. All major linkages in the Mowday, Porter and Steers (1982) model of the determinants of organizational commitment were tested and supported. Commitment had a strong association with behavioral intentions to turnover, which in turn were significantly associated with subsequent turnover behavior.*

The construct organizational commitment has received increasing attention during the past decade. Conceptual and empirical studies have explored construct definition, identification of the antecedents and consequences of commitment, and the processes through which organizational commitment develops and exerts its influence on subsequent worker reactions.

A myriad of conceptual and empirical definitions of the commitment construct can be found. Indeed, Morrow (1983) suggested that there may be more than 25 commitment related concepts and measures. Much of the work on commitment has been influenced by Porter and his associates (e.g., Porter, Steers, Mowday, & Boulian, 1974). Organizational commitment is defined as the "strength of an individual's identification with and involvement in a particular organization" (Porter et al., p. 604). The committed employee (a) believes in and accepts the organization's values and goals, (b) is willing to put forth considerable effort on behalf of the organization, and (c) has a strong desire to remain a member of that organization. Mowday, Steers, and Porter (1979) note that this defines organizational commitment as more than passive loyalty to an organization. It is an *active* association between the individual and the organization such that organizationally committed employees are "willing to give something of themselves in order to contribute to the organization's well-being" (Mowday, Porter, & Steers, 1982, p. 27).

According to Mowday et al., (1982) organizational commitment research

---

Address all correspondence to Jon L. Pierce, University of Minnesota, Duluth, MN.

Copyright 1987 by the Southern Management Association 0149-2063/87/\$2.00.



(e.g., Hall & Schneider, 1972; Hrebiniak & Allutto, 1972; Jauch, Glueck, & Osborn, 1978; Koch & Steers, 1978; Morris & Sherman, 1981; Porter, Crampon, & Smith, 1976; Steers, 1977; Stevens, Beyer, & Trice, 1978) provides a rich understanding of the correlates of commitment, including its theoretical antecedents and consequences. A major limitation to much of the research conducted on commitment is that it is cross-sectional in nature and has failed to provide sufficient understanding of the processes through which commitment develops.

Building upon the earlier work of Buchanan (1974), Mowday et al. (1982) provided a theoretical model to explicate the processes by which commitment develops. The primary purpose of the present investigation is to provide an empirical test of the Mowday et al. model of commitment.

### The Development of Organizational Commitment

To date, the process by which organizational commitment develops and operates is only partially understood. Still, a number of theoretical models have emerged to help explicate this process (e.g., Angle & Perry, 1983; Becker, 1960; Mowday et al., 1982; Salancik, 1977; Steers 1977). The *member-based model* (Angle & Perry, 1983) considers the locus of commitment as residing in the actions and attributes of the employee. According to Salancik's perspective (1977), commitment is "a state of being in which an individual becomes bound by his actions" (p. 62). More specifically, Salancik argues that individuals who are free to behave in certain ways develop attitudes that are consistent with their choices (e.g., committing behaviors lead to committing attitudes).

Building upon exchange and interdependence theory (Homans, 1961; Thibaut & Kelley, 1959) Farrell and Rusbult (1981) define job commitment as a function of "the rewards and costs (satisfaction) derived from a job, the quality of the individual's job alternatives, and the magnitude of the individual's investment in the job" (p. 81). The *side bets model* offered by Becker (1960) suggests that anything of value invested by the individual in the organization (e.g., time, effort) that would be deemed as worthless or lost with organizational departure produces commitment. This form of commitment has an economic as opposed to an affective or emotional orientation.

Attributes brought to the workplace by the individual may be a prime source of organizational commitment. The collective works of several organization scholars (e.g., Bateman & Strasser, 1984; Bem, 1967; O'Reilly & Caldwell, 1981; Salancik & Pfeffer, 1978) suggest that pre-employment attitudes may play a meaningful role in the subsequent development of commitment. For example, O'Reilly and Caldwell (1981) and Salancik and Pfeffer's (1978) work shows that information, ideas, and attitudes carried into the work place can play a powerful role in subsequent attitude formation. Buchanan (1974), Mowday (1980), Mowday and McDade (1980), and Wanous (1980) note that employee pre-employment expectations have an impact on employment commitment.

According to Angle and Perry (1983) the *organization-based model* considers commitment to be a function of the way the member has been treated by the organization. It has been observed on numerous occasions (e.g., Morris & Sherman (1981); Steers (1977); Stevens et al. (1978)) that job/role characteristics and

the nature and character of work experiences (e.g., role conflict, role ambiguity, leader initiating structure) influence the level of commitment that develops.

Mowday et al. (1982) suggest that understanding the development of commitment requires delineating three stages: the pre-entry stage, early employment period work experiences, and the middle/late career stage. At the pre-employment stage, individuals enter organizations with different levels of a "propensity to become committed." This propensity is a function of personal characteristics, expectations about the job, and the circumstances associated with the decision to join the organization.

The second stage in the model represents the early employment period. Berlew and Hall (1966), Hall (1976), Stedry and Kay (1962), and Vanous (1980) have argued that job-related experiences during initial months on the job play a critical role in the development of work-related attitudes and behaviors. Mowday et al. (1982) propose that initial work experiences should influence the development of commitment. As organizational membership unfolds, commitment develops as various organizational events are experienced. Building from the work of Salancik (1977), they noted that characteristics of the job and work environment should influence organizational commitment. New employees who have alternative job opportunities, for example, are less likely to develop positive attitudes toward their current job (i.e., strong commitment).

The final stage of the model is the mid- to late-career stage (i.e., entrenchment or continuing commitment). This part of the model hypothesizes that length of service has a positive association with commitment as it operates through the *principles* of investments, social involvement, job mobility, and sacrifices.

It is not our intention to provide an integration of the various commitment models. Instead, because the framework offered by Mowday et al., appears to integrate many of the issues addressed by the various models, we have chosen to conduct a test of the determinants of organizational commitment as proposed in that model. Specifically we will attempt to: (a) relate organizational commitment to personal characteristics, job/role expectations, and pre-employment propensity to organizational commitment; and (b) relate organizational commitment to initial work experiences and experienced responsibility. In addition, several of the important consequences of commitment will be examined through inspection of the relationships between organizational commitment and employee behavioral intentions, and turnover and absenteeism behavior. A distinguishing feature of the present study is that subjects are studied prior to on-the-job and organizational experiences, and they are followed through stages of the "early employment period."

## Method

### *Design and Procedures*

Two paper-and-pencil questionnaires were administered to a group of hospital employees (nurses, clerical, technicians, administrative, and custodial personnel). The first survey was administered in the Personnel Department to each new employee ( $n = 99$ ) on the day he or she was formally hired by the organization and prior to any direct experience with the new job. While completing employ-

ment records, the new employee was given a letter from the researchers and the questionnaire. The letter provided a brief explanation of the study, asked for their voluntary participation in the study, and assured participants of the confidentiality of their responses even though they were asked to put their names on the questionnaire for future research purposes. Upon completion of the questionnaire (in the Personnel Department), the employee placed the questionnaire in an envelope and mailed it to the researchers. This first data collection measured a set of job/role expectations the employee brought to the new job, propensity for organizational commitment, several individual differences, and basic demographic data.

After 3 months of employment, the second questionnaire was administered. As each participant reached the 3-month employment anniversary, a letter was sent by the researchers requesting continued participation in the survey. The host organization provided job release time for participants to come to an office on a specified time and date to complete the second survey. During this 3-month period, 26 of the new employees had terminated their employment, resulting in a sample of 73 for the second data collection effort. All 73 remaining employees voluntarily completed the second questionnaire, which measured job and work experience variables, experienced responsibility, organizational commitment, and a set of behavioral intentions pertaining to future absenteeism and turnover. Records from the host organization were used to gather data on individual employee absenteeism and turnover behavior. These same records were examined again after 6 months to obtain updated information on these behaviors. Finally, at the end of the year during which the study took place, organizational records were examined to identify which employees had terminated their employment. Within 12 months of the initiation of the study, 36 of the original 99 employees had terminated.

#### *Variables and Their Measurement*

Organizational commitment was measured with Porter, Steers, Mowday and Boulain's (1974) 15-item instrument. The three primary antecedent variables measured were experienced responsibility (Hackman & Oldham, 1975), employability (i.e., the extent to which other hospitals and/or organizations that the participant is aware of and has access to as a possible employee currently need lots of workers, need a few workers, are not hiring, or are laying people off), and propensity for organizational commitment. Propensity for organizational commitment was measured with a modification of the Porter et al., (1974) commitment scale so as to make the scale a measure of "inclinations" or personal tendency (e.g., "I am inclined to feel a great sense of loyalty to the organization that I work for", "I am inclined to care about the fate of the organization that employs me", "I am inclined to tell others that I am proud to be a part of the organization that I work for").

Mowday et al. (1982) indicate that it is difficult to identify who will have the propensity for organizational commitment. Passing reference is made to needs that would be classified as higher order needs and to a belief system that emphasizes work and personal control. The personal characteristics measured in our study included demographic variables (i.e., sex, age, education, number of dependents, number of previous employers during the past 3 years), and personality

variables (i.e., growth-need strength (Hackman & Oldham, 1975), locus of control (James, 1975), and work as a central life interest (Dubin, Champoux, & Porter, 1975)).

With regard to expectations, Mowday et al. (1982) make generalized reference to high expectations about the job and role characteristics (e.g., challenging job), supervisory behavior, and reward practices. Six variables reflecting job/role expectations brought to the job by the new employee were measured in the study: (a) job complexity (an additive model representing autonomy, variety, identity, and job feedback taken from the Sims, Szilagyi, & Keller (1976) scale); (b) leader initiating structure and (c) consideration behavior (Form XII of the Leader Behavior Description Questionnaire; Stogdill, 1963); (d) participation in unit decision making (Pierce, 1979); (e) instrumentality of good performance for the receipt of intrinsic reward (e.g., for my new job, this is the relationship that I expect between my overall performance and nine intrinsic outcomes, such as feelings of personal achievement); and (f) expectancy perceptions (i.e., four questions reflecting the relationship between effort and overall job performance).

Five variables reflecting initial work experiences that Mowday et al. (1982) suggest would affect experienced responsibility were measured. The work experience variables are peer cohesion (Buchanan, 1974), job complexity (Sims et al., 1976), leader initiating structure and consideration behavior (Stogdill, 1963), and participation in unit decision making (Pierce, 1979).

Behavioral intention variables reflecting absenteeism (i.e., thinking absenteeism, intend to be absent) and turnover intentions (i.e., thinking of quitting, intend to search, intend to quit) were patterned after Mobley, Horner, and Hollingsworth's (1978) work. Turnover and absenteeism data (i.e., total time lost, part-day and whole-day incidents at 3- [time-2] and 6- [time-3] month periods of employment) were taken from organizational records. Finally those employees who terminated their employment by a specific date (i.e., December 31 of the study year) were identified from organizational records at time-4. A prediction of those terminating their employment by a specific date was made across the sample of employees who were still working for the hospital at the 3-month period ( $n = 73$ ).

Internal consistency was examined for each of the multi-item variables using Cronbach's (1951) alpha coefficient. The reliability estimates ranged from .55 for pre-employment expectancy expectations to .93 for participation in unit decision making. See Table 1 for reliability estimates and descriptive statistics. Where applicable, Table 1 also provides information pertaining to the number of scale items and the response range employed by each research scale.

### Analyses

Pearson product-moment correlations were used to examine the relationships among study variables. In addition, multiple regression was employed to examine each of the major linkages in the determinants of organizational commitment model. These regression results will be presented, including the original multiple correlations ( $R$ ) and coefficients of determination ( $R^2$ ), along with the  $R$  and  $R^2$  values adjusted for sample size.

Because the design of the study does not permit a longitudinal test of each link-

Table 1  
Descriptive Statistics

Variables	Data Collection Periods <sup>a</sup>	Mean	SD	N	Items	Alpha	Scale Range
Organizational Commitment	2	73.44	13.28	73	15	.86	1-7
Organizational Commitment Propensity	1	79.42	11.23	99	15	.84	1-7
Employability	1	1.99	.74	99	1	N.A.	1-4
Responsibility	2	33.74	4.33	73	6	.60	1-5
Personal Characteristics	1						
Sex	1	1.31	.47	99	1	N.A.	1-2
Age	1	3.09	1.80	99	1	N.A.	1-9
Education	1	3.65	1.74	99	1	N.A.	1-4
Dependents	1	1.97	1.35	99	1	N.A.	1-7
Previous Employers	1	2.09	1.23	99	1	N.A.	1-7
Growth Need Strength	1	45.76	7.79	99	6	.88	1-7
Internal Locus of Control	1	31.70	4.27	99	11	.79	1-4
Job-Central Life Interest	1	4.84	2.38	99	16	N.A.	1-3
Job/Role Expectations	1						
Job Complexity	1	61.22	9.72	99	19		
Variety	1	15.12	4.44	73	4	.88	1-5
Autonomy	1	21.48	4.77	73	6	.84	1-5
Identity	1	15.93	3.29	73	3	.87	1-5
Feedback-Job	1	9.29	2.90	73	3	.81	1-5
Leader Initiating Structure	1	41.53	5.02	99	10	.84	1-5
Leader Consideration	1	39.43	4.48	99	10	.60	1-5
Instrumentality	1	38.23	4.19	96	9	.86	1-5
Expectancy	1	7.24	.98	97	4	.55	1-2
Decision Participation	1	25.43	8.80	98	6	.93	1-5
Initial Work Experience	2						
Job Complexity	2	61.82	10.39	73	16	N.A.	
Leader Initiating Structure	2	39.77	5.57	73	10	.94	1-5
Leader Consideration	2	38.45	5.93	73	10	.85	1-5
Decision Participation	2	10.88	4.29	73	6	.78	1-5
Peer Cohesion	2	14.93	2.68	73	4	.74	1-5
Behavioral Intentions	2						
Think Quit	2	1.97	1.01	72	1	N.A.	1-5
Intend Search	2	2.08	1.41	73	1	N.A.	1-5
Intend Quit	2	1.97	1.38	73	1	N.A.	1-5
Think Absenteeism	2	1.73	.77	73	1	N.A.	1-5
Intend Absenteeism	2	1.07	.30	73	1	N.A.	1-8
Terminations	2	1.77	.42	78	1	N.A.	
Terminations	3	1.52	.50	99	1	N.A.	
Total Time Lost Absenteeism	2	819.18	1,036.70	85	1	N.A.	
Part Day Absent Incidents	2	5.42	7.73	88	1	N.A.	
Whole Day Absent Incidents	2	1.13	1.82	85	1	N.A.	
Total Time Lost Absenteeism	3	1,313.06	1,182.06	68	1	N.A.	
Part Day Absent Incidents	3	6.44	10.11	70	1	N.A.	
Whole Day Absent Incidents	3	2.02	1.92	66	1	N.A.	
Experienced Meaningfulness	2	22.14	4.51	72	4	.83	1-5

<sup>a</sup>Data collection period matches: 1 = > the initial data period at time of employment; 2 = > data collection by questionnaire and organizational records at the 3-month employment period; and 3 = > data collection from organizational records at the 6-month employment period. <sup>b</sup>Sex: Female = 1, Male = 2. <sup>c</sup>Age was scaled on a 9-point scale in 4-year increments: 1 = 20 years or under, and 9 = 61 years or over. <sup>d</sup>Education was scaled on an 8-point scale: 1 = 8th grade or less, 2 = some high school, 3 = completed 1 year college, professional or technical school, 4 = completed 2 years college, 5 = completed 3 years college, 6 = college graduate, 7 = some graduate training, 8 = completed advanced degree. <sup>e</sup>Dependents was measured with an open-ended question. <sup>f</sup>Number of previous employers during the past 3 years was measured with an open-ended question.

ages in the model, hierarchical multiple regression was employed to examine the longitudinal portions of the model (e.g., the prediction of organizational commitment with propensity for organizational commitment across a 3-month period), and to simulate the longitudinal design in those areas where only cross-sectional data were available (e.g., propensity for organizational commitment is

assumed to be a function of personal characteristics, yet both sets of data were collected at one point in time). Thus, we tested the two complete paths in the model with hierarchical multiple regression by entering the primary and secondary antecedents respectively.

Finally, correlation analyses were used to examine the association between 3-month organizational commitment and employee behavioral intentions. Both sets of variables were employed in order to predict subsequent employee turnover and absenteeism behavior.

## Results

### *Antecedents of Organizational Commitment*

*The primary antecedents.* The propensity for organizational commitment brought to the organization by the employee and the sense of experienced responsibility created as a result of initial work experiences were posited as the two primary predictors of early employment organizational commitment. Regressing organizational commitment on these primary antecedents produced multiple correlations of .62 ( $p \leq .01$ ) and .34 ( $p \leq .01$ ) respectively (see Table 2).

Taken together, organizational commitment propensity and experienced responsibility (which have a  $r = .37$ ,  $p \leq .01$  relationship, see Table 3) account for 40 percent of the variance ( $R = .63$ ,  $p \leq .01$ ) in commitment.

Table 2

Antecedents to Organizational Commitment - Multiple Regressions

Predictors	R	Adj <sup>a</sup> R	R <sup>2</sup>	Adj R <sup>2</sup>	df	F	Sig
Organizational Commitment Propensity (OCP)	.62	(.61)	.38	(.37)	1,70	43.46	.000
Experienced Responsibility (ER)	.34	(.32)	.11	(.10)	1,70	8.88	.004
Organizational Commitment Propensity and Experienced Responsibility	.63	(.62)	.40	(.38)	2,69	22.70	.000
Employability (E)	.12	(.09)	.01	(.00)	1,70	1.04	.311
OCP + E + (OCP x E)	.62	(.61)	.39	(.37)	2,69	21.84	.000
ER + E + (ER x E)	.34	(.30)	.11	(.09)	2,69	4.39	.016

Hierarchical Multiple Regression								
	Step	R	Adj R	R <sup>2</sup>	Adj R <sup>2</sup>	df	F	Sig
Experienced Responsibility	1	.34	(.33)	.11	(.10)	1,70	8.88	.004
Initial Work Experiences	2	.48	(.40)	.23	(.16)	6,65	3.25	.007
Organizational Commitment Propensity	1	.62	(.61)	.38	(.37)	1,70	43.46	.000
Personal Characteristics and Job Role Expectations	2	.75	(.67)	.56	(.45)	15,56	4.85	.000
Organizational Commitment Propensity and Experienced Responsibility	1	.63	(.62)	.40	(.38)	2,69	22.70	.000
Initial Work Experiences Job Role Expectations and Personal Characteristics	2	.83	(.75)	.70	(.57)	21,50	5.46	.000

<sup>a</sup>Adj refers to the adjusted R and R<sup>2</sup> values

Employability (the availability of alternative job opportunities) is also positioned as a major variable in the Mowday et al. (1982) model, although its exact role in the model is somewhat uncertain. Mowday et al. suggest that employability moderates the relationship between organizational commitment and two of the primary antecedents (i.e., felt responsibility and organizational commitment propensity). In their discussion of this relationship, however, a main effect is suggested. Mowday et al. state that "the availability of alternative job opportunities would lead to less positive attitudes [presumably, by *attitudes* the authors mean organizational commitment] although this influence may result from more complex interactions between job offers and job-related factors" (p. 64).

Given the lack of clarity specifying the actual role played by employability, we chose to inspect both the main and interactive effect relationships. The main effect ( $R = .12, p = .31$ ) of employability on commitment is not significant. Moderated regression analyses were employed to test for a significant interactive relationship between employability and (a) organizational commitment propensity, and (b) experienced responsibility. Each of these interactive terms failed to produce a significant increase in explained criterion variance above that produced by the independent effects of organizational commitment propensity and experienced responsibility. (Due to the fact that the main and interactive effects attrib-

Table 3  
Selected Correlations

Variables	Organizational Commitment	Organizational Commitment Propensity	Experienced Responsibility
Job/Role Expectations:			
Job Complexity		.40**	
Leader Initiating Structure		.41**	
Leader Consideration		.34**	
Instrumentality Perceptions		.49**	
Expectancy Perceptions		.21*	
Decision Participation		.19*	
Personal Characteristics:			
Sex		-.31**	
Age		-.37**	
Education		-.04	
Dependents		-.31**	
Previous Employers		-.42**	
Growth Need Strength		.29**	
Internal Locus of Control		.24**	
Job-Central Life Interest		.20*	
Initial Work Experiences:			
Job Complexity			.36**
Leader Initiating Structure			.14
Leader Consideration			.02
Decision Participation			.16
Peer Cohesion			.12
Organization Commitment Propensity			.37**
Employability	-.12		
Experienced Responsibility	.34**	.37**	

Note: Complete correlations are available from the authors on request.

\* $p < .05$  \*\* $p < .01$

utable to employability failed to play a significant role, this variable was excluded from subsequent analyses.)

*Antecedents of organizational commitment propensity.* Two sets of variables (personal characteristics and job/role expectation) were posited as antecedents to an individual's propensity to become organizationally committed. The design of the current study does not permit an examination of causal linkages in this part of the model; therefore the following observations represent an assessment of the magnitude and direction of associations.

The combined sets of personal characteristics (demographic and personality) accounted for 36% of the variance in organizational commitment propensity. The demographic variables alone produced an  $R$  of .55, while the personality variables produced an  $R$  of .34.

Job/role expectations carried to the organization by the new employee were also significantly related to the employee's propensity for organizational commitment. The set of six expectation variables accounted for 42% of the variance ( $R = .65$ ) in propensity for commitment. Taken together, these two sets of variables (personal characteristics and job/role expectations) accounted for 53% of the variance in organizational commitment propensity ( $R = .73, p \leq .01$ ).

*Antecedents of experienced responsibility.* Five variables (job complexity, participative unit decision making, peer cohesiveness, leader initiating structure, and consideration behavior) reflecting initial work experiences were hypothesized as antecedents to the development of a sense of experienced responsibility. Because neither a theoretical nor empirical literature is available to indicate the time lag between the set of work experiences and the development of the sense of

Table 4

Antecedents to Organizational Commitment Propensity and  
Experienced Responsibility Multiple Regressions

Predictors	Organizational Commitment Propensity						
	$R$	Adj $R$	$R^2$	Adj $R^2$	$df$	$F$	Sig
1. Personal Characteristics: Sex, Age, Education, Dependents, Employers, Growth Need Strength, Locus of Control, Job-Cen- tral Life Interest	.60	(.55)	.36	(.30)	8,86	5.93	.000
2. Demographic-Personal characteristics: Sex, Age, Education, Employability Dependents	.55	(.51)	.30	(.26)	5,89	7.64	.000
3. Personality-Personal characteristics: Growth Need Strength, Locus of Control, Job-Central Life Interest	.34	(.28)	.11	(.08)	3,91	3.90	.011
4. Job-Role Expectations: Job complexity, Leader Initiating Structure, Leader Consideration, Instrumentality and Expectancy Perceptions, Participative Decision Making	.65	(.61)	.42	(.37)	6,65	7.95	.000
5. Personal Characteristics and Job-Role Expectations	.73	(.68)	.53	(.41)	4,57	4.55	.000
Experienced Responsibility							
1. Job Complexity, Participative decision making, Leader Behavior, Peer Cohesion	.45	(.37)	.20	(.14)	5,67	3.38	.009



responsibility, we assumed that these effects would unfold more or less continuously over time. Thus, during the first 3 months of employment, the set of work experiences should produce concomitant impact upon experienced responsibility. The cross-sectional data for these two sets of variables produced a significant ( $p \leq .01$ ) multiple correlation ( $R = .45$ ) accounting for 20% of the variance in experienced responsibility using the five experience variables (see Table 4). Only one of the five individual initial work experience variables, however, (job complexity  $r = .36$ ,  $p \leq .01$ ) had a significant association with experienced responsibility.

*Test of the complete antecedents of organizational commitment model.* Employing hierarchical multiple regression to control the order of variable inclusion in the analysis, we can make the following observations. First, the Mowday et al. (1982) model predicts that organizational commitment is directly influenced by experienced responsibility, which is in turn a function of initial work experiences. In the testing of this path, organizational commitment regressed upon experienced responsibility produced an  $R$  of .34; adding the initial work experience variables resulted in a significant increase in explained criterion variance ( $R = .48$ ). Second, the model proposes a second set of predictors: that is, commitment is seen to be an outgrowth of a propensity to commitment that is related to both personal characteristics and the employee's job/role expectation. Testing this path, organizational commitment regressed upon propensity for organizational commitment produced an  $R$  of .62. When the personal characteristics and job/role expectation variables were added, this multiple correlation increased to  $R = .75$ , accounting for a significant increase in explained organizational commitment variance.

Although our the subject-to-item ratio was somewhat stretched, when variance in organizational commitment was predicted by the entire set of both primary and secondary variables, 70% of the commitment variance was accounted for ( $R = .83$ ,  $p \leq .01$ ;  $R = .75$  when adjusted for sample size and the number of variables). A similar model without the secondary predictors produced a noticeably smaller  $R$  of .63. Inclusion of the secondary predictors significantly increased prediction of criterion variance.

### *Consequences of Organizational Commitment*

*Attendance and turnover behavioral intentions.* After 3 months on the job, all five behavioral intentions (three related to turnover and two related to absenteeism) had significant negative relationships with commitment (see Table 5). The size of these relationships ranged from  $r = -.23$  ( $p \leq .05$ ) for absenteeism intention through  $r = -.43$  ( $p \leq .01$ ) for thinking of quitting.

*Behaviors.* Organizational commitment, measured at the 3-month employment period, was significantly related (see Table 5) to both total time lost due to absenteeism ( $r = -.28$ ,  $p \leq .05$ ) and to the number of whole-day absenteeism incidents ( $r = -.31$ ,  $p \leq .01$ ) that occurred during this first 3 months of employment. Organizational commitment, however, failed to significantly predict employee behaviors (turnover and absenteeism) during the next 3-month employment period. There were, however, significant relationships (see Table 5)

Table 5

## Organizational Commitment - Behavioral Intention and Behavior Correlations

	Organizational Commitment <i>r</i>	Terminations- 3-6 month period	Terminations- year end
Behavioral Intentions			
Think Quit	-.43**	.26*	.25*
Intend Search	-.33**	.36**	.26*
Intend Quit	-.38**	.43**	.34**
Think Absenteeism	-.38**		
Intend Absenteeism	-.23*		
Turnover			
Turnover (6 months)	.15		
Turnover (year end)	.10		
Absenteeism			
Total Time Lost (3 months)	-.28*		
Total Time Lost (6 months)	.07		
Part Day Incident (3 months)	-.19		
Part Day Incident (6 months)	-.09		
Whole Day Incident (3 months)	-.31**		
Whole Day Incidents (6 months)	.13		

\* $p < .05$ ; \*\* $p < .01$ .

between each of the three turnover behavioral intentions (i.e., thinking of quitting, intend to search, and intend to quit) and actual turnover during the second 3-month period of employment. This held true for year-end turnover as well.

### Discussion

The results of the present investigation provide strong support for the major linkages in the determinants of organizational commitment model presented by Mowday et al. (1982). Pre-employment propensity to organizational commitment and early work experiences that produce a sense of responsibility were both significant predictors of commitment after 3 months of employment.

Interpretation of the results from this study relative to the propensity to commitment construct should be approached with caution. First, it is important to note that Mowday et al., did not clearly or comprehensively articulate the meaning of propensity to become committed. One interpretation of the construct is that there is a constellation of factors (e.g., personal characteristics and expectations) with which an individual enters an organization. These factors reflect the individual's propensity to become organizationally committed. Second, it is not certain whether our direct measure of propensity to organizational commitment is a measure of an actual pre-employment propensity or a measure of "first day" organizational commitment.

Within the context of the preceding caveats, an alternate interpretation of our findings can be offered. Job/role expectations and personal characteristics (i.e., pre-employment propensity to become committed) were significantly related to first day commitment, which in turn significantly predicted the level of employee commitment at the 3-month employment period. This set of variables (personal

characteristics-propensity, and day-one commitment) successfully predicted approximately 40% of the variance in commitment 3 months later.

With this rival interpretation and these cautionary notes in mind, we will proceed with another interpretation of the results from this investigation. The data suggest that an individual's propensity to become organizationally committed is a major predictor of the level of commitment which subsequently develops during the early employment period. Of the variance in organizational commitment at the 3-month period of employment 36% was predicted by new employees' expressions of their propensity to become organizationally committed before they had started their new job/work relationship.

As was hypothesized, an employee's propensity to become organizationally committed was related to both personal characteristics and the set of job/role expectations the employee brings to a new place of employment. Available data did not permit an examination of the development of a propensity for organizational commitment. At best the data permit the construction of a partial profile of the person with a propensity to become organizationally committed. Specifically, employees with strong growth needs, who have an internal locus of control, and for whom the job is a central life interest appear to have a strong propensity for organizational commitment. The data also suggest that females, older workers, those with more stability in their previous employment history, and those with a greater number of dependents have a stronger tendency to become committed.

High levels of organizational commitment propensity were also associated with the following job/role expectations: complex jobs, leadership high in initiating structure and consideration behavior, participation in work unit decision making, an expectancy that hard work leads to high performance, and the expectation that high performance will lead to the receipt of intrinsic rewards. These findings reinforce the arguments of Salancik and Pfeffer (1978) and O'Reilly and Caldwell (1981) that pre-employment attitudes influence post-employment attitudes.

The Mowday et al. (1982) model also posits that employees who as a result of initial work experiences develop a sense of experienced responsibility for work outcomes will be more likely to become organizationally committed. The data from the present investigation support this relationship and thereby reinforce the work of Stedry and Kay (1962) and Berlew and Hall (1966), who emphasized the importance of the early organization socialization processes. Specifically, they emphasized the importance of early work experiences that are demanding and challenging for producing long-term satisfaction and performance. Our investigation found that job complexity was a major contributor to higher levels of experienced responsibility.

Employees for whom relatively high levels of organizational commitment did not develop during the early employment period had a higher level of absenteeism than those employees who became more highly committed. It is interesting to note that organizational commitment did not predict employee turnover at either time period. This relationship does not surprise us because we would assume the commitment-turnover relationship operates much like other attitude-turnover relationships (see for example, Mobley's [1977] discussion of the satisfactions-

turnover process). It appears as though decreasing levels of commitment and/or the failure of commitment to develop triggers the psychological process associated with turnover (and absenteeism). That is, thoughts about quitting (absenteeism) precede intentions to quit (absenteeism), which in turn precede the actual behavioral event.

From an applied perspective, we note that not all individuals hired are equally likely to develop a strong level of commitment to the organization during their early employment history. Attempts to identify those individuals who do and to direct them into the organization could alter the overall level of employee commitment. The results of our investigation also alert us to the critically important early employment period and the experiences of the new employee. Organizational experiences, especially those stemming from the design of the job, can produce a sense of experienced responsibility for work outcomes that will have a major and functional impact upon the subsequent development of organizational commitment.

Some recommendations for future conceptual and empirical work to extend the determinants model are suggested by these findings. It might be useful to incorporate perspectives from exchange theory (e.g., Morris & Sherman, 1981; Steers, 1977; Stevens et al., 1978). It can be argued that initial work experiences that lead to experienced meaningfulness of one's work/role in the organization will enhance organizational commitment (i.e., initial work experiences  $\rightarrow$  experienced meaningfulness of work  $\rightarrow$  organizational commitment). Steers (1977) suggested that employees who believe the job and/or organization make use of their valued skills are more likely to engage in an exchange with the organization and return greater commitment. In the present investigation, it appeared that the level of experienced meaningfulness of work developed during the early employment period led to organizational commitment. The correlation between these two variables was significant ( $p \leq .01$ ,  $r = .49$ ).

Despite the strengths of the present study relative to earlier tests of similar models, there are several limitations which should be noted. Many of the measures used in this study were based on paper and pencil self-reports. This raises the possibility of some level of common method effects in the results. In addition, the literature provides little guidance pertaining to the temporal development of organizational commitment. Because of this, the 3- and 6-month periods chosen to examine the development of commitment could be limiting.

Future research efforts should be directed to the "propensity for commitment" construct. The current operationalization of this construct is potentially plagued by one immediately identifiable problem. Due to the similarity in wording of the commitment and propensity for commitment measures, part of their association might be a function of common-method. There are, however, three observations that need to be emphasized as we consider this issue. First, although organizational commitment once developed is seen as a relatively stable state, it is unlikely that this attitude has had a chance to develop fully and stabilize during the early employment period. It is during this early period that the new employee is just beginning to have a meaningful set of organizational experiences, and this set

of experiences partly influences the level of commitment that subsequently develops.

Second, the first survey administration took place prior to the employees' actually experiencing relevant organizational events. Third, although the wording of the two scales is somewhat similar, we propose that they do in fact capture a different set of conditions. The propensity for organizational commitment items ask about the employees' *inclination*, whereas the organizational commitment items are written within the context of a *current* state. Together these observations lead us to believe that we are not dealing with a mere test-retest correlation, but a pre-employment attitude.

It should be noted that, even though measures of commitment propensity were obtained before participants actually experienced their jobs, their commitment propensity may have been influenced somewhat by their experiences during the selection process, by job/organizational information offered as pre-employment previews, and perhaps even by information obtained from others (e.g., current and previous employees). Indeed, there is evidence in the literature that perceptions of job-related factors can be strongly influenced by social cues (O'Reilly & Caldwell, 1979; Salancik & Pfeffer, 1978). It would be very useful in future research to measure commitment propensity before any exposure to a particular organization. This would allow exploration of a relatively pure measure of commitment propensity as a characteristic of the person and of Steers' suggestion that persons possess a relatively stable tendency to become committed upon entering any organization.

### References

- Angle, H.L., & Perry, J.L. (1983). Organizational commitment: Individual and organization influences. *Work and Occupations*, 10, 123-146.
- Bateman, T.S., & Strasser, S. (1984). A longitudinal analysis of the antecedents of organizational commitment. *Academy of Management Journal*, 27, 95-112.
- Becker, H.S. (1960). Notes on the concept of commitment. *American Journal of Sociology*, 66, 32-40.
- Bem, D.J. (1967). Self-perception: An alternative interpretation of cognitive dissonance. *Psychological Review*, 74, 183-200.
- Berlew, D.E., & Hall, D.T. (1966). The socialization of managers: Effects of expectations on performance. *Administrative Science Quarterly*, 2, 207-233.
- Buchanan, B. (1974). Building organizational commitment: The socialization of managers in work organizations. *Administrative Science Quarterly*, 19, 533-546.
- Cronbach, L.J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16, 297-334.
- Dubin, R., Champoux, J.E., & Porter, L.W. (1975). Central life interests and *Administrative Science Quarterly*, 20, 411-421.
- Farrell, D., & Rusbult, C.E. (1981). Exchange variables as predictors of job satisfaction, job commitment, and turnover: The impact of rewards, costs, alternatives, and investments. *Organizational Behavior and Human Performance*, 27, 78-95.
- Hackman, J.R., & Oldham, G.R. (1975). Development of the Job Diagnostic Survey. *Journal of Applied Psychology*, 60, 159-170.
- Hall, D.T. (1976). *Careers in Organizations*. Santa Monica: Goodyear.
- Hall, D.T., & Schneider, B. (1972). Correlates of organizational identification as a function of career pattern and organizational type. *Administrative Science Quarterly*, 17, 340-350.

- Homans, G.C. (1961). *Social behavior: Its elementary forms*. New York: Harcourt, Brace, & World.
- Hrebiniak, L.C., & Alluto, J. (1972). Personal and role-related factors in the development of organizational commitment. *Administrative Science Quarterly*, 17, 555-572.
- James, W.H. (1975). Internal versus external control of reinforcement as a basic variable in learning theory. Unpublished Doctoral dissertation, Ohio State University, Columbus, OH.
- Jauch, L.R., Glueck, W.F., & Osborn, R.N. (1978). Organizational loyalty, professional commitment, and academic research productivity. *Academy of Management Journal*, 21, 84-92.
- Koch, J.D., & Steers, R.M. (1978). Job attachment, satisfaction and turnover among public sector employees. *Journal of Vocational Behavior*, 12, 119-128.
- Mobley, W.H. (1977). Intermediate linkages in the relationships between job satisfaction and employee turnovers. *Journal of Applied Psychology*, 62, 237-240.
- Mobley, W.H., Horner, S.D., & Hollingsworth, A.T. (1978). An evaluation cursars of hospital employee turnover. *Journal of Applied Psychology*, 63, 408-414.
- Morrs, J.H., & Sherman, J.D. (1981). Generalizability of an organizational commitment model. *Academy of Management Journal*, 24, 512-526.
- Morris, J., & Steers, R.M. (1980). Structural influences on organizational commitment. *Journal of Vocational Behavior*, 17, 50-57.
- Morrow, P. (1983). Concept redundancy in organization research: The case of work commitment. *Academy of Management Review*, 8, 486-500.
- Mowday, R. (1980, August). *Unmet Expectations about unmet expectations: Employee reactions to disconfirmed expectations during the early employment period*. Paper presented at the 40th Annual Meeting of the Academy of Management, Detroit.
- Mowday, R., & McDade, T. (1980, August). *The development of job attitudes, job perceptions and withdrawal propensities during the early employment period*. Paper presented at the 40th Annual Meeting of the Academy of Management, Detroit.
- Mowday, R.T., Porter, L.W., & Steers, R.M. (1982). *Employee organization linkages: The psychology of commitment, absenteeism, and turnover*. New York: Academic Press.
- Mowday, R.T., Steers, R.M., & Porter, L.W. (1979). The measurement of organizational commitment. *Journal of Vocational Behavior*, 14, 224-247.
- O'Reilly, C.A., III, & Caldwell, D.F. (1979). Informational influence as a determinant of perceived task characteristics and job satisfaction. *Journal of Applied Psychology*, 64, 157-165.
- O'Reilly, C.A., III, & Caldwell, D.F. (1981). The commitment and job tenure of new employees: Some evidence of post-decisional justification. *Administrative Science Quarterly*, 26, 597-616.
- Pierce, J.L. (1979). Employee affective responses to work unit structure and job design: A test of an intervening variable. *Journal of Management*, 5, 193-211.
- Porter, L.W., Crampon, W.J., & Smith, F.J. (1976). Organizational commitment and managerial turnover. *Organizational Behavior and Human Performance*, 15, 87-98.
- Porter, L.W., Steers, R.M., Mowday, R.T., & Boulain, R.V. (1974). Organizational commitment, job satisfaction, and turnovers among psychiatric technicians. *Journal of Applied Psychology*, 59, 603-609.
- Salancik, G.R. (1977). Commitment and the control of organizational behavior and belief. In B.W. Staw and G.R. Salancik (Eds.), *New directions in organizational behavior* (pp. 1-54). Chicago: St. Clair Press.
- Salancik, G.R., & Pfeffer, J. (1978). A social information processing approach to job attitudes and task design. *Administrative Science Quarterly*, 23, 224-253.
- Sims, H.P., Jr., Szilagyi, A.D., & Keiler, R.T. (1976). The measurement of job characteristics. *Academy of Management Journal*, 19, 195-224.
- Stedry, A., & Kay, E. (1962). *The effects of goal difficulty on performance*. Lynn, MA: General Electric Company.
- Steers, R.M. (1977). Antecedents and outcomes of organizational commitment. *Administrative Science Quarterly*, 22, 46-56.
- Stevens, J.M., Beyer, J.M., & Trice, H.M. (1978). Assessing personal role and organizational predictors of managerial commitment. *Academy of Management Journal*, 21, 380-396.
- Stogdill, R.M. (1963). *Manual for the Leader Behavior Description Questionnaire - Form XII*. Columbus, OH: Bureau of Business Research, The Ohio State University.

- Thibaut, J. W., & Kelley, H. H. (1959). *The social psychology of groups*. New York: Wiley.
- Wanous, J. P. (1980). *Organizational entry: Recruitment, selection and socialization of newcomers*. Reading, MA: Addison-Wesley.

Jon L. Pierce is a Professor of Organization and Management in the Department of Management Studies at University of Minnesota. Randall B. Dunham is a Professor of Management in the School of Business at University of Wisconsin.

ALTERNATIVE WORK SCHEDULES:  
TWO FIELD QUASI-EXPERIMENTS<sup>1</sup>

RANDALL B. DUNHAM  
Graduate School of Business  
University of Wisconsin-Madison  
1155 Observatory Drive  
Madison, WI 53706  
(608 263-2120)

JON L. PIERCE  
School of Business and Economics  
University of Minnesota-Duluth  
10 University Drive  
Duluth, MN 55812  
(218 726-7929)

MARIA B. CASTAÑEDA  
Industrial Relations Research Institute  
University of Wisconsin-Madison  
6321 Social Sciences Building  
Madison, WI 53706  
(608 262-1403)

December 15, 1986

---

<sup>1</sup>The authors would like to thank Joel R. Levin of the University of Wisconsin-Madison for his very helpful input regarding the design of the statistical analyses reported in this paper.



## ABSTRACT

### ALTERNATIVE WORK SCHEDULES:

### TWO FIELD QUASI-EXPERIMENTS

In the first ( $N=140$ ) of two quasi-experimental field studies, trial group employees were changed from a 5/40 to a 4/40 work schedule for four months then returned to a 5/40 schedule. In a second study ( $N=102$ ), trial group employees were changed from 5/40 to flextime. Reactions were evaluated using a model for understanding the impact of work schedules. The effects of schedule changes matched those anticipated by pre-intervention surveys of employees. Factors related to organizational effectiveness were enhanced where specific organizational needs were met. Interference with personal activities was reduced where employees had experienced specific difficulties. The most powerful effect, however, was on worker attitudes toward specific work schedules. In addition, a mild positive (perhaps Hawthorne) effect was evident for a wide range of general worker reactions.

A requisite aspect of any organization is a work schedule for its members. To be effective, work schedules must be assigned which meet organizational needs and constraints. The better the match between work schedules and these needs/constraints, the more effective the organization. A schedule can enhance effectiveness through its impact on the performance of individual employees, the coordination of the work within and among groups of employees, and the degree to which customer/client needs are met by the work schedule.

In addition to influencing organizational effectiveness rather directly, work schedules can also affect several reactions of organizational members. To be attractive to an employee, a work schedule must meet his/her needs. These needs involve personal preferences for the particular time of day s/he prefers to work. They also include personal needs for off-job activities such as conducting personal business and interacting with friends and family members. There are differences in the degree to which work schedules interfere with these off-job activities. Given these observations, we anticipate two relatively direct effects of work schedules on employees. The first of these is the degree to which the work schedule interferes with personal activities. The second is an affective reaction to the characteristics of the schedule itself. It is assumed that these two types of reactions to schedules are related such that satisfaction with the schedule is, in part, a function of the degree to which that schedule interferes with or facilitates personal activities. These two sets of worker reactions should each exert a moderate amount of influence on more general reactions to the work experience such as overall job satisfaction, job involvement, motivation, and experienced stress. Since these more general reactions are quite far removed from the characteristics of the work schedule, it is expected that the influence of the schedule on these will be considerably less than the influence on the more immediate reactions of perceived interfer-

ence and satisfaction with the schedule. This could help explain some of the ambiguous findings on this issue in the current work scheduling literature.

Figure 1 summarizes the effects proposed in the preceding paragraphs. The present paper presents two empirical investigations of major linkages contained in this model. In each of these studies, the characteristics of employee work schedules are changed and the subsequent effects are explored. In Study 1, a group of employees working a 5/40 schedule were placed on a 4/40 schedule for four months, after which they were returned to the 5/40 arrangement. In Study 2, a group of employees working a 5/40 schedule were placed on a flextime schedule and monitored for six months. Five research questions (specified below) were addressed in each study. Each contains a general directional prediction. These predictions are based on previous research and on the model presented in the present paper. It should be noted that even though we are making the same general prediction for flextime and 4/40, this does not imply that we are predicting identical effects for the two schedules. It should also be noted that our predictions are made for groups of employees who had previously indicated preferences for the alternative schedules implemented as part of these studies.

-----  
Insert Figure 1 About Here  
-----

- 1) Does the introduction of an alternative work schedule (4/40 or flextime) influence organizational effectiveness as measured by employee performance, work coordination, and client service? It is predicted that organizational effectiveness will improve.

- 2) Does the introduction of an alternative work schedule (4/40 or flextime) influence interference with the personal activities of workers in the areas of: a) interactions with family and friends; b) access to services, events, and consumables; and c) the conduct of financial activities? It is predicted that movement from 5/40 to 4/40 or from 5/40 to flextime will cause interference to decrease, while movement from 4/40 to 5/40 will cause interference to increase.<sup>2</sup>
- 3) Does the introduction of an alternative work schedule (4/40 or flextime) influence worker satisfaction with the work schedule? It is predicted that movement from 5/40 to 4/40 or from 5/40 to flextime will cause satisfaction with the work schedule to increase, while movement from 4/40 to 5/40 will cause satisfaction to decrease.
- 4) Does the introduction of an alternative work schedule (4/40 or flextime) influence general worker reactions (e.g., overall satisfaction, job involvement, motivation, and stress reactions). It is predicted that movement from 5/40 to 4/40 or from 5/40 to flextime will cause a small improvement in these reactions while movement from 4/40 to 5/40 will cause a small decline in these reactions.

Organizations are often quite uncertain about the probable effects of the introduction of a particular alternative work schedule. This is understandable

---

<sup>2</sup>This prediction is quite straightforward for the flextime schedule if we assume that schedule will allow individual workers to alter their schedules to reduce interference. A 4/40 schedule would, however, produce mixed results. The extra day off should reduce some interference on a weekly basis but the two extra hours of work per work day could increase interference during these days.

in light of the inconsistency of reactions to work schedules reported in the literature. It would be very useful to an organization to be able to anticipate worker reactions to alternative schedules prior to the selection of one for implementation. In each of the present studies, information was obtained which allowed prediction of the probable effects of an alternative work schedule prior to the introduction of the schedule. This allowed comparison of anticipated reactions to subsequent actual reactions to the new work schedule. Thus, our final research question is:

- 5) Do worker reactions toward an alternative work schedule (4/40 or flextime) obtained prior to experience with the alternative schedule match actual reactions after experiencing the alternative? In other words, can reactions be predicted prior to the introduction of an alternative schedule? It is predicted that reactions will be accurately anticipated.

#### LITERATURE REVIEW

During the last 25 years, practitioners and researchers have devoted a great deal of attention to alternative forms of work scheduling with compressed and flexible patterns receiving the most attention. The character of this literature varies dramatically. Much of the early work scheduling literature is primarily composed of anecdotal reports of organizational experiences with various forms of staggered, shortened, compressed, and flextime schedules. More recently, however, more complete conceptual frameworks (Cohen & Gadon, 1978; Pierce & Newstrom, 1980; Ronen, 1981) and a number of field experiments have found their way into the literature (Ivancevich & Lyon, 1977; Kim & Campagna, 1981; Latack & Foster, 1985; Orpen, 1981; Narayan & Nath, 1984; Ralston, Anthony & Gustafson, 1985).

We will briefly review some of the relevant literature on the effects of alternative work schedules. At least some previous research has dealt with the impact of schedules on organizational effectiveness, on interference with personal activities, on attitudes toward the schedule, and on general worker reactions.

#### Organizational Effectiveness

Studies focusing on the impact of compressed work schedules on employee performance have produced mixed results. Wheeler (1970) and Hartman and Weaver (1977) reported productivity increases. Goodale and Aagaard (1975) found no significant productivity changes when a group of workers was moved from a 5/40 schedule to a compressed and shortened work week (4/38). Calvasina and Boxx (1975) also examined the effects of a change from a 5/40 to a 4/38 schedule and found no significant productivity difference between the year prior to the change and the year following the change. Ivancevich (1974) identified a one-year performance increase following the introduction of a 4/40 schedule, but a 24-month follow-up (Ivancevich and Lyon, 1977) found no long-run evidence of an impact on performance.

Evidence concerning the impact of flexible schedules on performance is also mixed. Orpen (1981) and Kim and Campagna (1981) described field experiments with negligible performance effects attributable to a flexible work schedule. Walch and Gordon (1980) reported a significant increase in annualized productivity following the introduction of a flextime program for claims personnel in an insurance company. Similarly, performance increases were reported by Craddock, Lewis, and Rose (1981), Golembiewski and Hilles (1977), Gomez-Majia, Hopp, and Sommerstand (1978), and Morgan (1977). Ralston et al. (1985) found flextime to have a positive effect on productivity when limited physical resources were shared by a work group. Schein, Mauner, and Novak (1977) observed five different groups and reported no performance changes for some and increases for

others. Schein et al. noted that flexible working hours seldom have an adverse impact on employee performance, but their impact is often neutral.

#### Interference With Personal Activities

Several studies addressed work scheduling issues related to the degree to which schedules interfere with or facilitate personal activities. Primary reasons cited for favoring the 4/40 arrangement were associated with leisure time and the long weekend (Hodge & Tellier, 1975; Steele & Poor, 1970). Fatigue, the longer work day, conflict with evening activities, and conflict between the work schedule and family- and child-related activities (Hodge & Tellier, 1975; Kenny, 1974) are the primary drawbacks identified for the compressed work week system.

#### Specific Work Schedule Attitudes

Surprisingly, relatively little has been done to document the impact of variations in schedules on attitudes about schedules themselves (e.g., satisfaction with the schedule). Because the few exceptions to this have used widely differing research instruments, it is very difficult to integrate the results of these studies.

It is quite clear that many employees tend to favor nontraditional work schedules (cf. Ahmadi, Raiszedehe & Wells, 1986; Allen & Hawes, 1979; Goodale & Aagaard, 1975; Mahoney, 1978; Mahoney, Newman, & Frost, 1975; Millard, Lockwood, & Luthans, 1980; Nord & Costigan, 1973; Steele & Poor, 1970; Thomas, 1986). These same studies also indicate that, once the compressed or flexible schedule is experienced, most employees prefer to stay with the alternative schedule instead of returning to the traditional schedule.

Attitudes toward the compressed work week. Kenny (1974) examined employee attitudes toward the 5/40 and 4/40 schedule. It was found that if the "extra day off" was a Monday or Friday, employees favored the 4/40 by a 2-to-1 margin. The perceived favorability of the schedule was lessened if the day off was

another week day. This tends to confirm the findings of Mahoney (1978) who noted that attitudes toward the shortened/compressed work week and flexible working hours were largely a function of an individual's "leisure time orientation." Summarizing the effects of a 3/38 compressed work week schedule, Latack and Foster (1985) reported that 18 months after the introduction of the 3/38 schedule, employees strongly favored the compressed schedule.

Attitudes toward flexible working hours. Favorable travel effects (to and from work) have been identified for flexible schedules in a number of investigations (Golembiewski & Hilles, 1977; Hicks & Klimoski, 1981; Kim & Campagna, 1981; Nollen & Martin, 1978; Ronen & Primps, 1981). Specifically, these reports identify less stress associated with commuting to and from work, less congestion, greater ease of parking, and/or a reduction in commuting time to and from work.

#### General Worker Reactions

Job Satisfaction. Compressed work schedules have been associated with a full range of positive, negative, and neutral effects on various facets of worker satisfaction. This is not surprising to us given the "distance" between work schedule characteristics and reactions such as general job satisfaction (see Figure 1). Hodge and Tellier (1975), Hartman and Weaver (1977), and Steele and Poor (1970) all claimed positive effects due to 4/40 schedules. Ivancevich (1974) identified positive impact on several facets of satisfaction. Foster, Latack, and Riendl (1979), on the other hand, found no significant job satisfaction differences between groups of workers on 5/40 and 4/38 schedules.

The reported impact of flexible work schedules on general satisfaction has been more consistently positive than was the case for compressed schedules. For example, Orpen (1981), and Harvey and Luthans (1979) observed significant increases in work and supervision satisfaction associated with schedule flexi-



bility. Pierce and Newstrom (1982) found that workers with flexible schedules were significantly more job involved, more satisfied with their hours of work, and more organizationally committed than were their fixed schedule counterparts. Green (1984) also showed that flextime is favorably associated with several general attitudinal variables.

Fatigue and Stress. Higher levels of fatigue are often associated with compressed work schedules (Goodale & Aagaard, 1975; Hedges, 1971; Hodge & Tellier, 1975; Ivancevich, 1974; Ivancevich & Lyon, 1977; Steele & Poor, 1970). On the other hand, Ivancevich (1974) found that anxiety/stress decreased following the introduction of the 4/40 schedule. Latack and Foster (1985) indicated that fatigue did not appear to be a problem for participants in their study of the effects of a 3/38 work schedule.

Flexible working hours are often associated with relatively low levels of employee stress (Golembiewski & Hilles, 1977; Pierce & Newstrom, 1980, 1982). Pierce and Newstrom (1982) reported reduced symptoms of physiological and psychological stress for workers with greater work scheduling flexibility. Furthermore, Hicks and Klimoski (1981) reported lower levels of interrole conflict among flextime employees compared to those on a fixed schedule.

As indicated earlier, the present paper presents empirical studies which explore the various impacts of two alternative work schedules (4/40 and flextime). Our studies are better focused than many previous studies in this area due to the guidance of the model presented in Figure 1. Our statistical tests are also more consistent with the specific research questions than has been common in this area of the literature. We also attempt to improve upon much of the previous research by using quasi-experimental field designs with repeated measures and by utilizing well-developed and validated instruments for assessing the dependent variables. Also of importance are our tests of the degree to

which worker reactions to various work schedule changes can be accurately anticipated prior to the introduction of the new schedule.

#### METHOD

##### Sample and Study Design

Study 1. In the first experiment, a group of employees working a 5/40 schedule were placed on a 4/40 schedule for four months, after which they were returned to a 5/40 arrangement.

This 4/40 field experiment followed a pre-post test, comparison group design. Data for this natural quasi-experimental study were obtained from two groups of county health department employees. These employees consisted of county health nurses, health educators, environmental health technicians (e.g., sanitarians, laboratory technicians), clerical, and administrative personnel. The experimental group included 99 employees who participated during at least one of the three data collection periods.<sup>3</sup> Extensive traveling by employees made it difficult for all to participate in all three data collections. At Time 1, 67 participated, at Time 2, 75, and at time 3, 68 provided data. There were 43 employees who provided usable data at all three data collections. The comparison group consisted of 41 employees. This group was chosen from another county to provide a group comparable to the experimental group. The comparison group worked a 5/40 schedule throughout this study period. Study participants were informed about the experimental nature of the study and that the study was designed to determine if there were alternative work schedules which might be appropriate for the organization. No information about hypotheses was shared.

---

<sup>3</sup>Some of the data for the experimental group at time 1 and time 2 were included as part of an instrument validation study reported by Dunham and Pierce (1986).

Data were collected for the comparison group in conjunction with the first two data collection periods for the experimental group (i.e., before and after the 4/40 manipulation). At Time One, the experimental group was working a 5/40 schedule. Two weeks later, this group of employees began a 4/40 schedule. Two months following the introduction of 4/40 employee response and performance data were again collected. Four months after the implementation of the 4/40, these employees returned to a 5/40 work week. The third and final observation of the experimental group was made two months after return to the 5/40 schedule (the control group was not assessed at Time 3).

Study 2. In the second field experiment, employees working a 5/40 schedule were placed on a flextime schedule. Reactions to this schedule were monitored for six months following the work schedule change.

This field experiment also followed a pre-post test, comparison group design with multiple post experimental observations. The study was carried out with a group of employees (N=102) from the corporate office of a midwestern utility organization. This experimental sample consisted of 45 nonsupervisory (professional, clerical and technical employees) and 10 supervisors. The control group consisted of 37 nonsupervisory and 10 supervisory personnel. Employee groups (departments) were randomly assigned to either the experimental or control condition by drawing department names from a hat. Study participants were informed about the experimental nature of the study and the flextime schedule and the basis for selection into the experimental or control group.

Data were used from three points in time.<sup>4</sup> A survey was administered two weeks before the flextime program was implemented. Additional surveys were administered three and six months following the introduction of flextime.

---

<sup>4</sup>Some of the data from time 1 were included as part of the Dunham and Pierce (1986) validation study.

The flextime schedule included a core period between 1:30 and 3:30 during which time all employees were expected to be at the workplace. Employees were required to plan and submit a work schedule by noon on Wednesday for use during the upcoming week. This schedule could include a different schedule for each day of the week if so desired by the employee. Supervisors were responsible for reviewing the schedules proposed by employees to assure that the department could function effectively with the submitted schedules. Supervisors could request changes if necessary although this very seldom occurred. The actual work patterns of each participant were documented during the study. The most common starting time used was 8:00 a.m., although significant numbers of employees utilized both 7:00 and 7:30 a.m. starting times. Start times of 8:30 and 9:00 a.m. were also used, but less frequently. The most common quitting time was 5:00 p.m., followed closely by 4:30, 4:00, and 3:30. Quit times of 5:30 and 6:00 p.m. were also used, but only occasionally. Lunch periods of 30, 60, 90, and 120 minutes were all used, with 30 minutes and 60 minutes the most common. Virtually all participants utilized only two work periods per day (one before and one after the lunch break). More than three work periods were never used.

#### Measures

Study 1. Organizational effectiveness measures included five dimensions of worker performance, work coordination, and quality of client service. Performance was assessed with a supervisory performance appraisal. Four specific performance dimensions assessed were: productivity (produces a volume of work consistent with established standards), quality (performs duties accurately and effectively), reliability (performs work on assigned tasks in an efficient, conscientious, dependable manner without close supervision), and reaction to problems (identifies, analyzes and acts upon a problem in a constructive, responsible manner). These four scales were combined via an additive model to obtain an

overall performance measure. Each of the four performance dimensions was rated by the immediate supervisor on a frequency scale, where performance increments ranged from "0 to 10 percent of the time" to "91 to 100 percent of the time." The Dunham and Pierce (1986) work schedule scales were used to obtain measures of work coordination and client service associated with both 5/40 and 4/40 schedules at each point in time. These measures were obtained from non-supervisory employees as well as from first and second level managers. There were no significant differences as a function of level.

Scales developed by Dunham and Pierce (1986) were used to measure interference with personal activities. The three dimensions measured were interference with: activities with family and friends; access to services, events, and consumables; and financial activities.

Seven specific work schedule attitudes were measured. The first of these was time autonomy which was measured using Pierce and Newstrom's (1982) five item scale. Five scales from the Dunham and Pierce (1986) instruments were used to measure attitudes toward both 5/40 and 4/40 at each time point. These scales included: general schedule affect; schedule uniqueness; effects on family and social life; family attitude toward the schedule; and effects on transportation and personal security. Hours of work satisfaction was also measured using the faces scales (Kunin, 1955; Dunham & Herman, 1975).

Eight general worker reactions were measured at each point in time. These included general job satisfaction which was assessed using the short form of the Minnesota Satisfaction Questionnaire (Weiss, Dawis, England, & Logquist, 1967). Leisure time satisfaction was measured with a second set of faces scales. Organizational commitment was measured with the 15 item Porter, Steers, Mowday, and Boulain (1974) scale. The Lodahl and Kejner (1965) scale was used to measure job involvement. Intrinsic motivation was assessed with the Lawler and Hall

(1970) scale. A scale for the measurement of fatigue was created for this study. Finally, symptoms of physiological and psychological stress were measured by the seven-item scale developed by Patchen (1970).

For those data collected directly from employees, questionnaires were administered to groups of about 20 employees who were given job release time for data collection purposes. Participation was voluntary and confidentiality was promised. Employees were asked to place their name or other personalized identification on each questionnaire to allow matching of participant responses across the multiple data collection periods.

Cronbach's (1951) coefficient alpha was employed to assess the reliability of each multiple item scale. The reliability estimates are presented in Table 1. Most reliabilities were at acceptable levels, with some exceptions for the two-item scales (see Table 1). Descriptive statistics for both studies are shown in Table 3.

---

INSERT TABLES 1, 2 and 3

---

Study 2. Organizational effectiveness was measured by the Dunham and Pierce (1986) scale for work coordination. Interference with personal activities were measured as in study one. The specific work schedule attitude measures from study one were used in study two to measure time autonomy, general schedule affect, schedule uniqueness, effects on family and social life, and effects on transportation and personal security.

Fourteen measures of general worker reactions were obtained for study two. Four of these were the same as used in study 1: job involvement, intrinsic motivation, physiological stress, and psychological stress. In addition, the short form of the Index of Organizational Reactions ( Smith, 1976; Dunham,

Blackburn, & Smith, 1977) was used to measure satisfaction with: physical work conditions, coworkers, amount of work, kind of work, career future, company policies and practices, pay, supervision, and overall satisfaction. Intentions to quit were obtained through self-report.

Coefficient alpha (Cronbach, 1951) was employed to assess the internal consistency of the multiple item scales. Table 2 presents the alpha coefficients for both the experimental and control groups. Again, most reliability estimates were acceptable. Descriptive statistics are presented in Table 3.

#### Analyses

In Study 1, only 43 of the 67 participants from Time 1 also participated at Times 2 and 3. To determine if there were any consistent systematic Time 1 differences between these 43 respondents and the 24 who participated at Time 1 but not Times 2 and 3, two-tailed t-tests were conducted for each of the study's 32 dependent variables. Only three of these tests were statistically significant at the .05 level. These differences indicated that prior to any work schedule changes the 43 respondents (relative to the 24): were less satisfied with the 5/40 work schedule; perceived more time autonomy; and were more favorable toward the effects of the 5/40 schedule on family and social life. Given these findings which showed no significant differences on 29 of the 32 dependent variables in the study, it was judged that the 43 employees who participated at all three data collection periods were not substantially different from the 24 who participated at Time 1 but were unable to participate at Time 2 and/or Time 3. It is particularly important to note that there were no differences at Time 1 on any of the variables directly related to the 4/40 schedule.

A set of nested and interaction contrasts (i.e., linear combinations of means where the coefficients add to zero) are tested within a planned comparison strategy. This is done in a manner consistent with that suggested by Kirk

(1982). Kirk discusses techniques which can be used for a priori identification of the most relevant specific cell contrasts and subsequent analysis of the statistical significance for each of these planned comparisons. One of these techniques, known as the Dunn-Bonferroni procedure (see Castañeda, Dunham, & Levin, 1986 for more detail), allows both one- and two-directional tests (or a combination of one- and two-directional tests). Significance tests, using the Dunn-Bonferroni procedure, are conducted by calculating a  $t$  statistic and then evaluating this (observed) value against its respective critical value. Observed  $t$  values are calculated according to the following general formula (Kirk, 1982, p. 107):

$$TD = \frac{\hat{\psi}_i}{\hat{\sigma}_{\psi i}}$$

Where,

$tD$  =denotes the Dunn-Bonferroni  $t$  statistic

$\hat{\psi}_i$  =denotes the estimated contrast of interest; and

$\hat{\sigma}_{\psi i}$  =denotes the estimated standard deviation of the contrast.

Critical values of  $tD$  for traditional alpha levels (.01, .05, .10) are available (Kirk, 1982; Bailey, 1977; Dayton & Schafer, 1973). Critical values for nontraditional alpha levels may be calculated with an approximation formula provided by Kirk (1982, p. 108).

In study one, three contrasts are required to test the five research questions. Contrasts 1 and 2 address research questions 1-4 while contrast 3 tests research question 5.

In contrast 1, observed changes for the experimental group between the pre-test and first post-test periods are compared to the observed changes for the control group during the same period. This tests for effects as the experimen-



tal group was moved from a 5/40 to a 4/40 schedule. Contrast 1 may be stated as follows:

$$\text{Contrast 1: } [E_{T2} - E_{T1}] > [C_{T2} - C_{T1}]$$

In contrast 2, the first post-test levels for the experimental group are compared to the second post-test levels for the same group. This tests for effects as the experimental group returned from a 4/40 to a 4/40 schedule. Contrast two may be stated as follows:

$$\text{Contrast 2: } E_{T3} < E_{T2}$$

In contrast 3, anticipated reactions to the 4/40 schedule (as measured at Time 1 while still on a 5/40 schedule) were compared to actual reactions formed after being placed on the 4/40 schedule. Because it was predicted that anticipated reactions would match actual reactions, a two-tailed test was used for this contrast which may be stated as follows:

$$\text{Contrast 3: } E_{T1} \neq E_{T2}$$

In study two, four contrasts are required to test the five research questions. Contrasts 1, 2, and 3 address research questions 1-4 and contrast 4 tests research question 5.

As in study 1, contrast 1 tests observed changes for the experimental group between the pre-test and first post-test periods in comparison to observed changes for the control group during the same period. This tests for effects as the experimental group was moved from a 5/40 to a flextime schedule. Contrast 1 appears as follows:

$$\text{Contrast 1: } [E_{T2} - E_{T1}] > [C_{T2} - C_{T1}]$$

The second contrast addresses the same issues as does contrast one but for changes over a longer time period:

$$\text{Contrast 2: } [E_{T3} - E_{T1}] > [C_{T3} - C_{T1}]$$

The third contrast focuses on the degree to which the flextime schedule produced changes in worker reactions across time. Thus, the question "Are reac-

tions to flextime different after six months than after three months?" can be answered. Because there is little basis for a directional prediction, a two-tailed test was used to test this contrast.

Contrast 3:  $[E_{T3} - E_{T2}] \neq [C_{T3} - C_{T2}]$

Contrast 4 for study 2 is the same as the third contrast from study 1. This time, anticipated reactions to the flextime schedule were compared to actual reactions formed after being placed on the flextime schedule:

Contrast 4:  $E_{T1} \neq E_{T2}$

### Results

#### Research Question 1

Research question 1 addressed the degree to which changes in work schedules influenced organizational effectiveness (see Table 4). For study 1 (5/40-->4/40-->5/40), six of the seven organizational effectiveness measures showed improvement following introduction of a 4/40 schedule although only one of these (client service) changed enough to be statistically significant (work coordination declined). Even though only one of the six individual variables produced a statistically significant effect, the pattern of findings was impressive. Therefore, we conducted a nonparametric sign test which revealed that the pattern of findings (i.e., the number of mean changes in the predicted direction relative to what would be expected by chance) was statistically significant ( $z=1.89$ ,  $p<.05$ ). Six of the seven showed decline after return to a 5/40 schedule (quality did not decline) ( $z=1.89$ ,  $p<.05$ ). For study 2, the only measure of organizational effectiveness (work coordination) declined following introduction of the flextime schedule (although not at a significant level). Work coordination did improve somewhat between the three and six month periods although it was still lower than prior to the introduction of flextime.

-----  
Insert Table 4 about here  
-----

#### Research Question 2

Research question 2 addressed the degree to which changes in work schedules influenced interference with personal activities (see Table 5). In study 1, movement from 5/40 to 4/40 decreased interference with activities with family and friends (at a significant level) and decreased interference with access to services, events, and consumables. Interference with financial activities increased (at a nonsignificant level). After return to the 5/40 schedule, access to services, events, and consumables was unchanged while interference with activities with family and friends and with financial activities increased (at nonsignificant levels). In study 2, movement to a flextime schedule increased the amount of interference experienced in all three areas (although none at a significant level).

-----  
Insert Table 5 About here  
-----

#### Research Question 3

Research question 3 explores the effects of changes in work schedules on specific work schedule attitudes (see Table 6). In study 1, significant positive effects were produced for general schedule affect and schedule uniqueness when employees changed from a 5/40 to 4/40 schedule. Nonsignificant increases were found for hours of work satisfaction and family attitude toward schedule while nonsignificant decreases were found for time autonomy, effects on family and social life, and transportation and personal security. Return to the 5/40 schedule produced significant decline for general schedule affect, uniqueness,

and hours of work satisfaction and nonsignificant decreases for time autonomy and family attitude toward the schedule. Nonsignificant increases were identified for effects on family and social life and transportation and personal security. In study 2, movement from 5/40 to flextime significantly increased time autonomy, significantly increased general schedule affect, and significantly improved effects on family and social life.

-----  
 Insert Table 6 About Here  
 -----

#### Research Question 4

In research question 4, the impact of schedule changes on general worker reactions was examined (see Table 7). Only one of the many tests of individual variables produced significant results. The pattern of findings is, however, consistent with our predictions. Therefore, we conducted nonparametric sign tests on the pattern of findings. In study one, following movement from 5/40 to 4/40, seven of eight general reactions showed improvement ( $z=2.13$ ,  $p<.05$ ). Upon return to the 5/40 schedule, seven of eight declined ( $z=2.13$ ,  $p<.05$ ). In study two, introduction of flextime led to improvement for all fourteen general worker reactions after three months ( $z=3.74$ ,  $p<.01$ ) with all but one of these remaining above 5/40 levels after six months ( $z=3.21$ ,  $p<.01$ ).

-----  
 Insert Table 7 About here  
 -----

#### Research Question 5

The final research question addressed the degree to which anticipated worker reactions to an alternative schedule (information obtained prior to experience with that schedule) match reactions which develop subsequent to actual

experience with that schedule. The first test of this question evaluates the degree to which group mean responses can be anticipated. As is shown in Table 8, no statistically significant differences between mean levels of anticipated reactions to the alternative schedules and subsequent actual reactions were found in either study.

-----  
 Insert Table 8 About here  
 -----

The second test of research Question 5 focuses on the reactions of individuals to alternative work schedules. High correlations would indicate that the rank order of reactions across a group of individuals was correctly anticipated. In Study 1 where subject data were matched across time, these correlations were evaluated. Five of the seven correlations for the experimental group were statistically significant and reasonably high (between .53 and .72) suggesting good anticipation of responses. It is useful to compare the experimental group T1-T2 correlations to the T1-T2 correlations for the comparison group. Assuming that the comparison group correlations provide an indication of the test-retest reliability of the measures, any significant departure of correlations for the trial group below those for the comparison group would indicate reduced ability to anticipate worker reactions to alternative schedules. Of the seven comparisons, only two (schedule uniqueness and family and social life) produced significantly lower correlations for the trial group than for the comparison group. This indicates that anticipation of individual worker reactions is less precise for these two schedule specific attitudes than for the remaining five.

#### DISCUSSION

In many ways, alternative work schedules have been one of the great fads of the 1970s and 1980s. It was hoped by many that the utilization of alternative

work schedules would produce broad benefits for organizations and for the individual members of organizations. Such hopes for 4/40 schedules led Riva Poor to make the following statement in 1970:

In my opinion, 4-day will spread, and spread rapidly, because it works well. Firms, by and large, are more efficient on 4-day; and employees, by and large, are better off with a 3-day weekend. It may also be better for the nation: if firms are more productive on 4-day, then 4-day has potential for increasing the GNP (Poor, 1970, p. 37).

Despite these hopes, the potential benefits of alternative schedules such as 4/40 or flextime have either not been realized or have been kept well hidden from the scientific literature. As noted in our introduction to this paper, support for benefits of such schedules is scarce and often contradictory.

Our reading of the literature suggests that the utilization of alternative work schedules has been based largely on a general belief that these alternatives should work well because they are "good." Many seem to accept the simple argument that workers prefer alternative schedules so introduction of one will produce broad and powerful effects on a wide range of worker reactions and organizational effectiveness. To these believers, we ask "why?" To understand and manage the potential benefits of an alternative work schedule, we must understand the processes through which these effects operate.

In an attempt to elucidate the processes involved in reactions to work schedules (alternative or traditional) we offered the model shown in Figure 1. This model suggests that the characteristics of a work schedule will influence organizational effectiveness only to the extent that the schedule meets organizational needs and constraints. The schedule should influence worker reactions to the extent that the schedule meets worker needs and preferences. The impact

of a work schedule on general worker reactions such as general satisfaction, job involvement, organizational commitment, or motivation should actually be quite minor since specific reactions to work schedules are only a small portion of the many factors influencing these general reactions.

Although we are not suggesting that the model shown in Figure 1 is complete, we do feel it can help in the interpretation of previous research and can help guide future work in the area. Examination of previous research from the perspective of our model suggests a rather haphazard approach to the selection of dependent variables used for the evaluation of the impact of work schedules. Also evident is a tendency to assume that an alternative schedule will better meet the needs, preferences, and constraints of organizations and organizational members.

Reading the literature to determine whether or not 4/40 or flextime is a "good thing" is as difficult and inappropriate as it would be to read the medical literature to determine whether open heart surgery is a good idea without reference to the condition of the patient. The work schedule literature shows that sometimes an alternative work schedule improves the organization and sometimes it does not. Unfortunately, we are seldom offered enough information about the "patient" (the organization and its members) to determine whether the alternative schedule was appropriate or to understand why it did or did not produce positive effects.

Our model and our reading of the literature both lead us to anticipate that the greatest effects of alternative schedules should be found in worker attitudes specific to work schedules themselves. Strong, broad effects on general worker reactions are less likely as is a strong impact on organizational effectiveness due to the many other environmental factors which influence these dependent variables. Our model does show a linkage from specific reactions to general worker reactions but these should not be powerful. Our model also shows

a linkage from general worker reactions to organizational effectiveness which are likely due to some improvements in attendance and retention. But why expect a strong direct impact of the work schedule on worker effectiveness? Unless workers must be high performers in order to use a desired schedule, why would it motivate employee effectiveness?

In the two studies reported in the present paper, we examined major aspects of the model shown in Figure 1. We did so in study one for a group of employees who clearly preferred the 4/40 schedule. In study two we worked with employees in a situation where over 80 percent preferred flextime over a 5/40 schedule. The results of these studies help us understand the nature and scope of reactions to alternative work schedules.

As expected given our model and the existing needs, preferences, and constraints of the organization and employees involved in study one, a 4/40 schedule did make a difference. It influenced organizational effectiveness but only to the extent that it met a particular need for client service.<sup>5</sup> It reduced interference with personal activities but only in an area where employees had been experiencing specific difficulties. Perhaps its largest impact, however, was on worker affective reactions to the characteristics of the schedule itself. A general positive halo (perhaps Hawthorne) effect was also realized for a wide range of general worker reactions but these were minor if not consistent. When these workers were returned to the original 5/40 schedule, these effects were, for the most part reversed.

In study two, introduction of flextime had an effect in several predictable areas. Not surprisingly, it made the coordination of work among employees more

---

<sup>5</sup>In fairness to those who would argue for a stronger impact on organizational effectiveness, we should note that we only assessed a relatively narrow set of factors related to organizational effectiveness.



difficult (although not a significant level and to a decreasing extent over time). The flextime schedule had little effect on interference with personal activities which is surprising in some ways. It can be noted, however, that these employees reported in an earlier survey that, although a 4/40 schedule would reduce interference, the particular flextime schedule implemented in this study did not provide discretion over large enough blocks of time to reduce interference. The biggest impact for workers changing to flextime was for attitudes specific to the schedule itself. As in study one, the largest single impact was for affective reactions to the schedule itself. Significant improvements were also reported for effects of the schedule on family and social life. These effects were maintained over both the three and six month periods assessed in this study. Again, as was found in study one, a general positive halo effect was realized for a wide range of general worker reactions. Again, these were consistent but minor. It is also interesting to note that some of this effect apparently washed out after six months consistent with that expected of a Hawthorne effect.

The results of the two studies reported in this paper will probably be disappointing to those who feel alternative work schedules are a cure-all for that which ails an organization and its employees. These results are, however, realistic. In the present studies, alternative schedules were offered which addressed a sub-set of organizational and member needs, preferences, and constraints. The results indicated that improvements in worker reactions and organizational effectiveness were realized in these areas but not in others. In other words, the schedules produced benefits where there was a reason to expect benefits. Strong global, general effects were neither expected nor found.

Most of the tests for impact of work schedule changes in the present studies focused on group mean changes. It is possible that alternative schedules

have different positive (or negative) impact for different people. For example, a working mother or father may react very favorably to a flextime schedule relative to his/her activities with the family. On the other hand, a young, single, upwardly mobile individual might react more strongly to a flextime schedule in the areas of coordination of work and service to clients/customers. Older workers might react with greater physical stress to the ten-hour work day of a 4/40 schedule but react favorably to the better access to financial services during the day off. Younger workers might have quite a different pattern. Such differential effects could account for the fact that our strongest effects tended to be in the area of general affect toward the work schedule which, presumably, would be influenced by any of these more specific factors. Future research might profitably explore the different profiles of individual responses to alternative schedules to more fully understand overall reactions. Documentation of both employee and organizational needs also appears necessary.

In many ways one of the most important findings of the present studies, from an applied perspective, was the discovery that it was possible to anticipate worker reactions to the alternative schedules prior to their introduction. Before being placed on 4/40 or flextime, workers told us (through the pre-test assessments) the ways in which they believed they would and would not react to the alternative schedules. After three to six months of experience with the new schedules, these were the reactions which actually emerged. If future use of the instruments employed in the present studies confirms this predictive ability, the use of employee input during design and implementation of alternative work schedules will greatly enhance the identification and effective introduction of advantageous work schedules. Data from the present studies identified two aspects of our work scheduling instruments which might need further work. Low reliabilities were found for the transportation and personal security scale

and for the uniqueness scale. Although these findings could be due to sloppy responses, it is more likely that they are due either to the fact that they are only two-item scales, or to lack of purity within the scales. Additional items are probably needed for each of these two scales. In addition, the transportation and personal security scale should probably be separated into two separate scales.

## REFERENCES

- Ahmadi, M., Raiszadeh, F., & Wells, W. 1986, April. Traditional versus non-traditional work schedules - A case study of employee preference. Industrial Management, 20-23.
- Allen, R. E., & Hawes, D. K. 1979. Attitudes toward work, leisure and the four day workweek. Human Resource Management, 18: 5-10.
- Bailey, B., Jr. 1977, June. Tables of the Bonferroni t statistic. Journal of the American Statistical Association, 72: 469-477.
- Calvasina, E., & Boxx, R. 1975. Efficiency of workers on the four day work week. Academy of Management Journal, 18: 604-610.
- Castaneda, M., Dunham, R. B. & Levin, J. R. 1986. Application of a powerful a priori multiple comparison technique with behavioral data. Paper to be presented at the 46th Annual Meeting of the Academy of Management. Chicago.
- Cohen, A. R., & Gadon, H. 1978. Alternative work schedules: Integrating individual and organizational need. Reading, MA: Addison-Wesley.
- Craddock, S., Lewis, T., & Rose, J. 1981. Flexitime: The Kentucky experiments. Public Personnel Management, 10: 244-252.
- Cronbach, L. J. 1951. Coefficient alpha and its internal structure of tests. Psychometrika, 16: 297-334.
- Dayton, H., & Schafer, W. D. 1973, March. Extended tables of t and Chi square for Bonferroni tests with unequal error allocation. Journal of the American Statistical Association, 68: 78-83.
- Dunham, R. B., & Herman, J. B. 1975. Development of a female faces scale for measuring job satisfaction. Journal of Applied Psychology, 60: 629-631.
- Dunham, R. B., & Pierce, J. L. 1986. Attitudes toward work schedules: Construct definition, instrument development and validation. Academy of Management Journal, 29: 170-182.

- Foster, L. L., Latack, J. C., & Riendl, L. J. 1979. Effects and promises of the shortened work week. Proceedings from the Annual Meeting of the Academy of Management, 226-230.
- Golembiewski, R. T., & Hilles, R. J. 1977. Drug company workers like new schedules. Monthly Labor Review, 100: 65-69.
- Gomez-Majia, L. R., Hopp, M. S., & Sommerstand, C. R. 1978. Implementation and evaluation of flexible work hour: A case study. The Personnel Administrator, 23: 39-41.
- Goodale, J. G., & Aagaard, A. K. 1975. Factors relating to varying reactions to the four-day work week. Journal of Applied Psychology, 69: 33-38.
- Green, C. 1984. Effects of alternative work schedules: A field experiment. Paper presented at the 44th Annual Academy of Management Meeting, Boston, MA.
- Hartman, R. I., Weaver, K. M. 1977. Four factors influencing conversion to a four-day work week. Human Resource Management, 16: 24-27.
- Harvey, B. H., & Luthans, F. 1979. Flexitime: An empirical analysis of its real meaning and impact. Business Horizons, 27: 31-36.
- Hedges, J. H. 1971. A look at the 4-day workweek. Monthly Labor Review, 96: 3-8.
- Hicks, W., & Klimoski, R. J. 1981. The impact of flexitime on employee attitudes. Academy of Management Journal, 24: 729-741.
- Hodge, B. J., & Tellier, R. D. 1975. Employee reactions to the four-day week. California Management Review, 18: 25-30.
- Ivancevich, J. M. 1974. Effects of the shorter workweek on selected satisfaction and performance measures. Journal of Applied Psychology, 59: 717-721.
- Ivancevich, J. M., & Lyon, H. L. 1977. The shortened workweek: A field experiment. Journal of Applied Psychology, 62: 34-37.
- Kenny, M. T. 1974. Public employee attitudes toward the four-day week. Public Personnel Management, 3: 159-161.

- Kim, J. S., & Campagna, A. F. 1981. Effects of flexitime on employee attendance and performance: A field experiment. Academy of Management Journal, 24: 729-741.
- Kirk, R. E. 1982. Experimental design: Procedures for the behavioral sciences. Belmont: Brooks/Cole.
- Kunin, T. 1955. The construction of a new type of attitude measure. Personnel Psychology, 8: 65-78.
- Latack, J. C., & Foster, L. W. 1985. Implementation of compressed work schedules: Participation and job redesign as critical factors for employee acceptance. Personnel Psychology, 38: 75-93.
- Lawler, E. E., III, & Hall, D. T. 1970. Relationships of job characteristics to job involvement, satisfaction and intrinsic motivation. Journal of Applied Psychology, 54: 305-312.
- Levin, J. R., & Marascuilo, L. A. 1973. Type IV errors and interactions. Psychological Bulletin, 80: 308-309.
- Lodahl, T. M., & Kejner, M. 1965. The definition and measurement of job involvement. Journal of Applied Psychology, 49: 24-33.
- Mahoney, T. A. 1978. The rearranged work week: Evaluations of different work schedules. California Management Review, 20: 31-39.
- Mahoney, T. A., Newman, J. M., & Frost, P. J. 1975. Worker's perceptions of the four-day week. California Management Review, 18: 31-35.
- Marascuilo, L. A., & Levin, J. R. 1970. Appropriate post hoc comparisons for interaction and nested hypotheses in analysis of variance designs: The elimination of type IV errors. American Educational Research Journal, 1: 397-421.

- Marascuilo, L. A., & Levin, J. R. 1976. A note on the simultaneous investigation of interaction and nested hypotheses in two-factor analysis of variance designs. American Educational Research Journal, 13: 61-65.
- Millard, C. W., Lockwood, D. L., & Luthans, F. 1980. The impact of a four-day workweek on employees. M.S.U. Business Topics, 28: 31-37.
- Morgan, F. T. 1977. Your (flex) time may come. Personnel Journal, 56: 82-85, 96.
- Narayan, V. K., & Nath, R. 1984, August. The influence of group cohesiveness on some changes induced by flexitime: A quasi-experiment, Journal of Applied Behavioral Science, 265-276.
- Nollen, S. D., & Martin, V. H. 1978. Alternative work schedules Part I: Flexitime. American Management Association Survey Report.
- Nord, W. R., & Costigan, R. 1973. Worker adjustment to the four-day week: A longitudinal study. Journal of Applied Psychology, 58: 60-66.
- Orpen, C. 1981. Effects of flexible working hours on employee satisfaction and performance: A field experiment. Journal of Applied Psychology, 66: 113-115.
- Patchen, M. 1970. Participation, achievement, and involvement on the job. Englewood Cliffs, NJ: Prentice-Hall.
- Pierce, J. L., & Newstrom, J. W. 1980. Toward a conceptual clarification of employee responses to flexible working hours: A work adjustment approach. Journal of Management, 6: 117-134.
- Pierce, J. L., & Newstrom, J. W. 1982. Employee responses to flexible work schedules: An inter-organization, inter-system comparison. Journal of Management, 8: 9-25.
- Pierce, J. L., & Newstrom, J. W. 1983. The design of flexible work schedules and employee responses: Relationships and process. Journal of Occupational Behavior, 4: 247-262.

- Poor, R. (ed.) 1970. 4 days, 40 hours: Reporting a revolution in work and leisure. Cambridge, MA: Bursk and Poor Publishing.
- Porter, L. W., Steers, R. M., Mowday, R. T., & Boulain, P. V. 1974. Organizational commitment, job satisfaction, and turnover among psychiatric technicians. Journal of Applied Psychology, 59: 603-609.
- Ralston, D. A., Anthony, W. P., & Gustafson, D. J. 1985. Employees may love flexitime, but what does it do to the organization's productivity? Journal of Applied Psychology, 70: 272-279.
- Ronen, S. 1981. Flexible working hours: An innovation in the quality of work life. New York: McGraw Hill.
- Ronen, S., & Primps, S. B. 1981. The compressed work week as organizational change: Behaviors and attitudinal outcomes. Academy of Management Review, 6: 61-74.
- Schein, V. E., Mauner, E. H., & Novak, J. F. 1977. Impact of flexible working hours on productivity. Journal of Applied Psychology, 62: 46-56.
- Smith, F. J. 1976. Index of Organizational Reactions (IOR), JSAS Catalog of Selected Documents in Psychology, 6 (MS No. 1265).
- Steele, R., & Poor, J. L. 1970. Work and leisure: The reactions of people at 4-day firms. 4 Days, 40 Hours. Cambridge, MA: Burk and Poor.
- Thomas, E. G. 1986, April/May. Flexible work keeps growing. Management World, 43-45.
- Walch, J. L., & Gordon, D. 1980. Assessing the impact of flexitime on productivity. Business Horizons, 23: 61-65.
- Weiss, D. J., Dawis, R. V., England, G. W., & Lofquist, L. H. 1967. Manual for the Minnesota Satisfaction Questionnaire. Minneapolis: University of Minnesota, Industrial Relations Center. Work Adjustment Project.
- Wheeler, M. E. 1970. Four days, forty hours: A case study. California Management Review, 17: 74-81.



**FIGURE 1**  
**THE IMPACT OF WORK SCHEDULE CHARACTERISTICS**

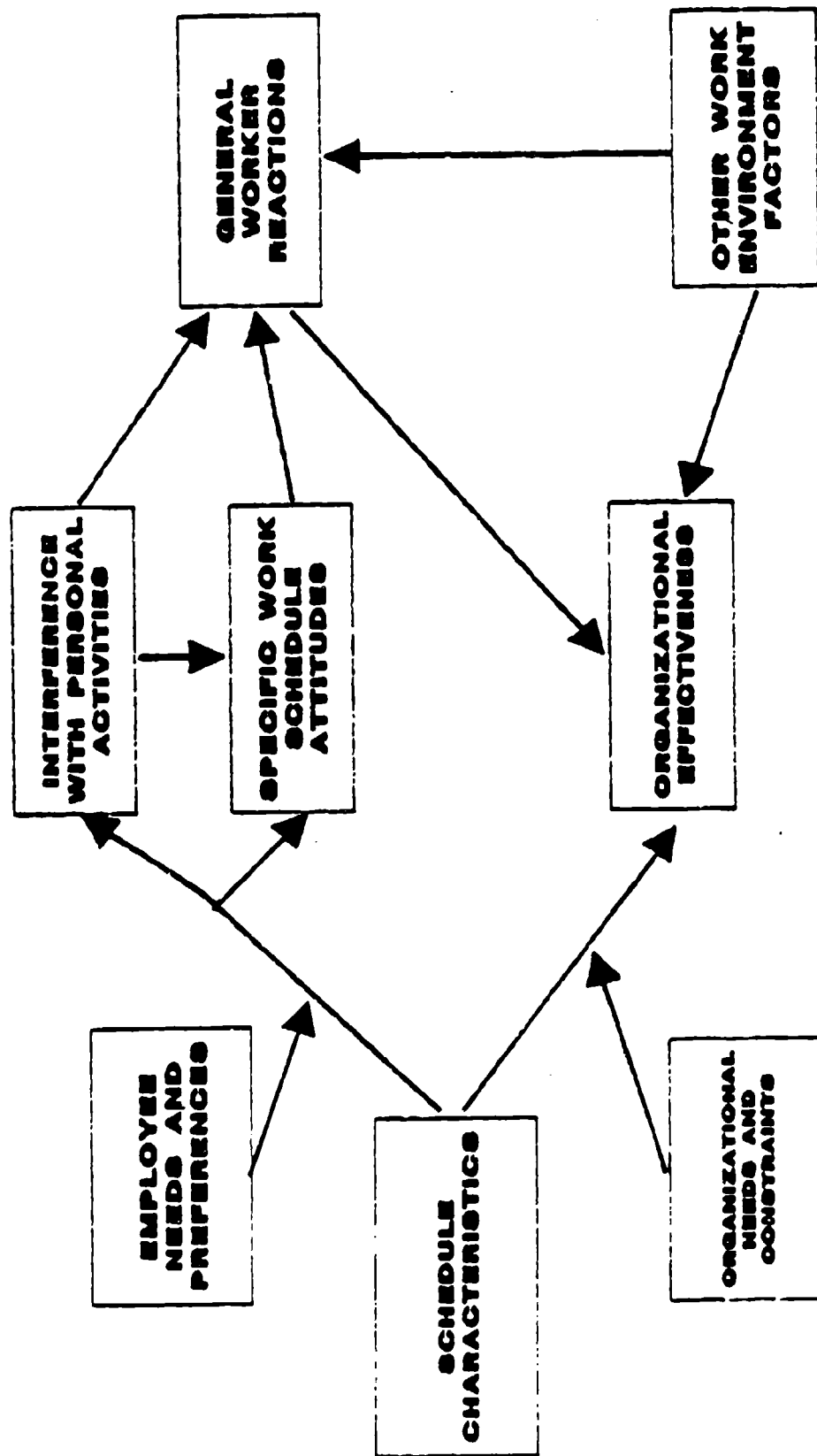


TABLE 1  
Reliability Coefficients (Coefficient  $\alpha$ )

## Study 1

<u>Organizational Effectivness</u>	<u>Time 1<sup>a</sup></u>	<u>Time 2<sup>a</sup></u>	<u>Time 3<sup>b</sup></u>
Performance	N.A.	N.A.	N.A.
Work Coordination			
5/40	.78	.91	.84
4/40	.85	.87	.94
Client Service			
5/40	.63	.79	.81
4/40	.81	.87	.88
<u>Specific Work Schedule Attitudes</u>			
Time Autonomy	.93	.94	.96
General Schedule Affect			
5/40	.74	.89	.87
4/40	.90	.78	.91
Uniqueness			
5/40	.64	.63	.62
4/40	.58	.72	.70
Family & Social Life			
5/40	.81	.74	.71
4/40	.72	.86	.90
Family Attitude Toward Schedule			
5/40	.44	.77	.95
4/40	.84	.84	.83
Transportation & Personal Security			
5/40	.45	.54	.06
4/40	.42	.65	.40
Hours of Work Satisfaction	N.A.	N.A.	N.A.
<u>General Worker Reactions</u>			
General Job Satisfaction	.83	.84	.82
Leisure Time Satisfaction	N.A.	N.A.	N.A.
Organizational Commitment	.87	.90	.90
Job Involvement	.70	.71	.78
Intrinsic Motivation	.72	.80	.85
Fatigue	.65	.65	.61
Physiological Stress	.68	.75	.83
Psychological Stress	.61	.68	.69

<sup>a</sup> Reliability estimates based on total sample.

<sup>b</sup> Reliability estimates based on experimental group.

TABLE 2

Reliability Coefficients (Coefficient  $\alpha$ )

	Study 2 <sup>a</sup>		
	Time 1	Time 2	Time 3
<u>Organizational Effectiveness</u>			
Work Coordination			
5/40	.94	.95	.93
Flextime	.82	.80	.90
<u>Activity Interference</u>			
Family & Friends	.88	.87	.89
Services, Events, Consumables	.81	.89	.88
Financial	.38	.56	.59
<u>Specific Work Schedule Attitudes</u>			
Time Autonomy	.87	.81	.89
General Schedule Affect			
5/40	.84	.83	.89
Flextime	.88	.83	.94
Uniqueness			
5/40	.51	.42	.68
Flextime	.50	.46	.26
Family & Social Life			
5/40	.75	.77	.64
Flextime	.52	.55	.24
Transportation & Personal Security			
5/40	.16	.38	.38
Flextime	.40	.56	.63
<u>General Worker Reactions</u>			
General Job Satisfaction	.76	.81	.78
Physical Conditions Satisfaction	.66	.79	.37
Coworker Satisfaction	.58	.62	.72
Amount of Work Satisfaction	.81	.70	.77
Kind of Work Satisfaction	.50	.42	.48
Career Future Satisfaction	.39	.31	.37
Company Policy Satisfaction	.73	.78	.79
Pay Satisfaction	.40	.34	.37
Supervisor Satisfaction	.76	.80	.53
Job Involvement	.69	.63	.74
Intrinsic Motivation	.50	.57	.59
Intention to Quit	.83	.86	.80
Physiological Stress	.52	.69	.70
Psychological Stress	.69	.63	.71

<sup>a</sup> Reliability Estimates Based on Total Sample

TABLE 3

Descriptive Statistics (Means (S.D.))

SCALE	STUDY 1						STUDY 2					
	Time 1		Time 2		Time 3		Time 1		Time 2		Time 3	
	F*	C**	F	C	F	C	F	C	F	C	F	C
<u>Organizational Effectiveness</u>												
Performance												
Quantity	7.70(1.33)	6.77(1.31)	8.31(0.89)	6.97(0.96)	8.25(0.89)	-	-	-	-	-	-	-
Quality	7.79(1.34)	7.06(1.15)	8.24(0.91)	7.41(0.88)	8.25(0.75)	-	-	-	-	-	-	-
Reliability	7.85(1.42)	6.07(1.53)	8.28(1.03)	7.21(0.77)	8.04(1.07)	-	-	-	-	-	-	-
Reactions to Problems	7.49(1.52)	6.77(1.58)	7.97(0.94)	6.92(1.35)	7.61(1.57)	-	-	-	-	-	-	-
Overall	30.82(4.88)	27.41(4.76)	32.79(3.26)	28.46(3.22)	32.14(3.58)	-	-	-	-	-	-	-
Work Coordination												
5/40	4.54(1.49)	4.29(1.38)	4.12(1.17)	4.50(1.83)	4.07(1.35)	3.98(1.13)	4.02(1.13)	4.21(1.57)	4.42(1.59)	4.31(1.50)	4.43(1.17)	-
4/40 or Flexline	4.65(1.54)	5.44(1.60)	4.51(1.55)	5.10(1.99)	4.65(1.66)	4.76(2.29)	4.91(1.64)	3.98(1.60)	4.24(1.71)	4.10(1.78)	4.78(1.64)	-
Client Service												
5/40	12.33(2.21)	16.21(1.62)	12.51(2.18)	13.77(3.50)	13.41(2.71)	-	-	-	-	-	-	-
4/40 or Flexline	13.56(2.90)	12.74(3.31)	13.83(3.02)	13.55(3.68)	13.14(3.06)	-	-	-	-	-	-	-
<u>Interference with Personal Activities</u>												
Family and Friends	31.95(8.41)	31.05(7.31)	26.74(7.38)	32.79(1.94)	28.83(8.10)	33.02(11.06)	35.08(9.37)	36.83(8.83)	34.13(10.74)	39.10(8.18)	35.18(10.98)	-
Services, Events and Consumables	28.95(8.34)	27.29(8.48)	27.88(8.16)	26.68(8.74)	27.88(8.25)	36.47(7.69)	37.02(8.00)	38.07(7.40)	34.84(9.82)	39.75(6.49)	34.57(9.05)	-
Financial	5.05(2.04)	6.93(1.96)	4.84(1.60)	6.29(2.09)	5.28(1.96)	7.62(2.24)	7.68(2.14)	8.33(1.92)	6.63(2.45)	8.37(1.95)	6.93(2.35)	-

\* Descriptive statistics based on the experimental group.

\*\* Descriptive statistics based on the control group.

## STUDY 2

## STUDY 1

SCALE	STUDY 1			STUDY 2			STUDY 2		
	Time 1	Time 2	Time 3	Time 1	Time 2	Time 3	Time 1	Time 2	Time 3
	M	M	M	M	M	M	M	M	M
<u>Specific Work Schedule Attitudes</u>									
Time Autonomy	19.07(6.29)	17.25(6.77)	18.74(6.51)	17.29(7.25)	17.63(5.97)	10.53(4.24)	10.23(3.79)	12.10(3.49)	12.75(3.06)
General Schedule Affect									
5/40	21.35(3.05)	22.74(3.30)	20.07(3.80)	22.23(4.21)	21.24(3.46)	20.07(4.21)	20.00(4.56)	19.42(4.55)	19.86(5.24)
4/40 or Flextime	23.09(2.66)	23.04(2.55)	24.19(2.80)	25.45(5.14)	24.98(4.19)	26.38(4.20)	26.17(4.47)	25.68(6.35)	26.03(5.10)
Uniqueness									
5/40	5.44(1.45)	5.11(1.60)	5.44(1.72)	4.70(1.37)	5.79(1.59)	5.53(1.63)	5.81(1.61)	5.76(1.82)	6.31(1.72)
4/40 or Flextime	7.74(1.51)	7.93(1.30)	7.16(1.51)	7.66(1.23)	7.77(1.15)	6.85(1.76)	6.32(1.06)	6.07(1.89)	6.06(1.67)
Family and Social Life									
5/40	4.86(1.47)	4.86(1.76)	5.16(1.38)	4.67(1.61)	4.91(1.45)	9.22(2.26)	9.21(2.12)	8.59(2.73)	8.78(2.06)
4/40 or Flextime	4.56(1.57)	4.30(1.51)	1.33(1.23)	4.55(1.96)	4.63(1.31)	11.36(1.55)	11.55(1.98)	12.02(2.34)	11.58(1.85)
Family Attitude Toward Schedule									
5/40	10.16(2.10)	10.27(2.20)	9.10(2.71)	10.92(2.48)	10.26(2.78)	-	-	-	-
4/40 or Flextime	11.20(2.57)	9.92(1.66)	11.17(2.17)	11.15(2.36)	10.61(2.75)	-	-	-	-
Transportation and Personal Security									
5/40	4.63(1.31)	3.93(1.27)	4.19(1.20)	3.70(1.34)	4.12(1.25)	4.36(1.11)	4.40(1.17)	4.36(1.44)	4.55(1.50)
4/40 or Flextime	3.93(1.28)	3.79(1.42)	4.00(1.27)	3.75(1.38)	4.17(1.11)	5.14(1.40)	4.85(1.56)	4.69(1.61)	4.57(1.72)
Hours of Work Satisfaction	4.74(1.09)	4.96(1.23)	5.16(1.25)	4.83(1.34)	4.56(1.16)	-	-	-	-

Descriptive Statistics (Means (S.D.))  
(continued)

SCALE	STUDY 1						STUDY 2					
	Time 1		Time 2		Time 3		Time 1		Time 2		Time 3	
	F	C	F	C	F	C	F	C	F	C	F	C
<u>General Worker Reactions</u>												
General Job Satisfaction	72.72(7.46)	75.70(10.43)	73.88(7.13)	74.03(9.59)	71.91(7.68)	57.20(7.08)	59.45(7.30)	59.62(7.20)	58.58(7.56)	58.49(6.40)	56.11(8.34)	
Physical Conditions Satisfaction						7.18(1.71)	7.00(1.76)	7.76(1.68)	7.05(1.57)	7.51(1.32)	6.86(1.63)	
Co-worker Satisfaction						7.04(1.79)	7.04(1.33)	7.38(1.41)	6.97(1.60)	7.06(1.43)	6.28(2.03)	
Amount of Work Satisfaction						6.47(1.82)	7.19(1.61)	6.98(1.37)	7.34(2.23)	6.86(1.46)	7.32(1.33)	
Kind of Work Satisfaction						7.51(1.60)	7.70(1.73)	7.90(1.26)	7.76(1.30)	7.63(1.17)	7.11(1.52)	
Career Future Satisfaction						7.11(1.75)	7.64(1.32)	7.12(1.67)	7.05(1.54)	7.04(1.37)	6.93(1.68)	
Company Policies Satisfaction						7.69(1.71)	8.02(1.34)	7.76(1.48)	7.92(1.58)	7.75(1.13)	7.43(2.10)	
Pay Satisfaction						7.14(1.39)	7.55(1.53)	7.33(2.030)	7.53(1.48)	7.31(1.43)	7.14(1.30)	
Supervision Satisfaction						7.05(1.81)	7.30(1.80)	7.38(1.66)	6.95(1.96)	7.33(1.52)	7.03(1.17)	
Leisure Time Satisfaction	4.47(1.53)	5.00(1.81)	4.98(1.34)	4.90(1.68)	4.35(1.40)							
Organizational Commitment	72.58(11.39)	79.46(13.93)	72.40(12.37)	77.32(15.49)	71.72(12.25)							
Job Involvement	13.23(3.20)	15.29(2.96)	13.30(2.95)	14.58(2.71)	13.09(3.08)	13.47(2.65)	13.21(3.06)	13.38(2.40)	12.81(3.11)	13.02(2.95)	12.53(2.81)	
Intrinsic Motivation	32.93(3.67)	36.39(3.05)	32.47(4.13)	35.58(3.15)	32.26(4.01)	19.58(2.54)	19.81(1.58)	19.66(1.99)	19.76(1.96)	18.79(2.51)	19.21(1.73)	
Intention to Quit						5.93(2.40)	5.34(2.49)	5.86(2.47)	5.42(2.73)	6.00(2.38)	5.68(2.11)	
Fatigue	11.12(2.31)	10.96(3.02)	10.88(2.24)	11.26(3.13)	10.91(2.40)							
Physiological Stress	9.83(3.43)	9.57(2.57)	8.81(3.24)	9.55(3.52)	9.12(3.21)	9.18(2.67)	9.12(2.50)	8.45(2.59)	8.97(2.86)	8.99(2.92)	9.86(2.55)	
Psychological Stress	8.29(1.70)	8.26(1.62)	8.49(1.54)	7.94(1.53)	8.47(1.49)	8.00(2.48)	7.62(2.43)	7.45(1.71)	7.84(2.41)	7.94(1.90)	8.43(2.39)	

TABLE 4  
 Research Question 1: Organizational Effectiveness  
Dunn-Bonferroni Tests

	Study 1		Study 2		
	<u>Contrast 1</u>	<u>Contrast 2</u>	<u>Contrast 1</u>	<u>Contrast 2</u>	<u>Contrast 3</u>
Performance					
Quantity	.822	-.178	-	-	-
Quality	.075	.032	-	-	-
Reliability	.150	-.605	-	-	-
Reactions to Problems	.485	-.736	-	-	-
Overall	.457	-.502	-	-	-
Work Coordination	-.327	-1.394	-.646	-.435	.142
Client Service	3.535 <sup>*1</sup>	-.700	-	-	-

<sup>1</sup> Critical Value  $t_0(.15/3) = t_0(.05) = t_0(.05)$ , 68 = 1.668

Note: Table values are the Dunn-Bonferroni statistics used to test contrast effects.

TABLE 5

## Research Question 2: Interference With Personal Activities

Dunn-Bonferroni Tests

	Study 1		Study 2		
	<u>Contrast 1</u>	<u>Contrast 2</u>	<u>Contrast 1</u>	<u>Contrast 2</u>	<u>Contrast 3</u>
Family & Friends	-1.597 <sup>*1</sup>	.874	1.059	1.235	.263
Services, Events, Consumables	-.112	.000	1.024	1.720	.688
Financial	.463	.806	1.794	1.420	-.250

<sup>1</sup> Critical Value  $t_0(15/2) = t_0(.075)$ ,  $67 = 1.457$

Note: Table values are the Dunn-BonFerroni statistics used to test contrast effects.



TABLE 6  
Research Question 3: Specific Work Schedule Attitudes  
Dunn-Bonferroni Tests

	Study 1		Study 2		
	Contrast <u>1</u>	Contrast <u>2</u>	Contrast <u>1</u>	Contrast <u>2</u>	Contrast <u>3</u>
Time Autonomy	-.115	-.576	1.670 <sup>*1</sup>	.885	-.709
General Schedule Affect	1.983 <sup>*2</sup>	-3.037 <sup>*3</sup>	3.863 <sup>*4</sup>	3.305 <sup>*5</sup>	-.052
Uniqueness	2.899 <sup>*6</sup>	-2.863 <sup>*3</sup>	.052	-.302	-.332
Family & Social Life	-.425	1.398	2.736 <sup>*4</sup>	2.927 <sup>*5</sup>	.253
Family Attitude Toward Schedule	.299	-.999	-	-	-
Transportation & Personal Security	-.635	.309	.553	-.250	-.656
Hours of Work Satisfaction	.929	-1.631 <sup>*7</sup>	-	-	-

1 Critical Value  $t_{0(.15/3)} = t_{0(.05)}$ , 80 = 1.665

2 Critical Value  $t_{0(.15/3)} = t_{0(.05)}$ , 68 = 1.668

3 Critical Value  $t_{0(.15/3)} = t_{0(.05)}$ , 41 = 1.684

4 Critical Value  $t_{0(.15/4)} = t_{0(.0375)}$ , 78 = 1.809

5 Critical Value  $t_{0(.15/4)} = t_{0(.0375)}$ , 68 = 1.813

6 Critical Value  $t_{0(.15/3)} = t_{0(.05)}$ , 67 = 1.661

7 Critical Value  $t_{0(.15/2)} = t_{0(.075)}$ , 42 = 1.468

Note: Table values are the Dunn-BonFerroni statistics used to test contrast effects.

TABLE 7  
 Research Question 4: General Worker Reactions  
Dunn-Bonferroni Tests

	Study 1		Study 2		
	Contrast 1	Contrast 2	Contrast 1	Contrast 2	Contrast 3
General Job Satisfaction	.683	-.872	1.009	1.313	.367
Physical Conditions Satisfaction	-	-	.704	.603	-.079
Coworker Satisfaction	-	-	.592	.964	.475
Amount of Work Satisfaction	-	-	.452	.336	-.128
Kind of Work Satisfaction	-	-	.497	.973	.600
Career Future Satisfaction	-	-	.845	.847	.052
Company Policies Satisfaction	-	-	.247	.843	.633
Pay Satisfaction	-	-	.287	.841	.468
Supervision Satisfaction	-	-	.840	.699	-.166
Leisure Time Satisfaction	.802	-1.507 <sup>*1</sup>	-	-	-
Organizational Commitment	.309	-.181	-	-	-
Job Involvement	.538	-.228	.247	.165	-.058
Intrinsic Motivation	.199	-.169	.142	-.175	-.312
Intention to Quit	-	-	-.133	-.235	-.101
Fatigue	-.425	.042	-	-	-
Physiological Stress	-.001	.315	-.487	-.708	-.262
Psychological Stress	.652	-.042	-.757	-.778	-.099

<sup>1</sup> Critical Value  $t_{\alpha(.15/2)} = t_{\alpha(.075)}, 42 = 1.468$

Note: Table values are the Dunn-BonFerroni statistics used to test contrast effects.

TABLE 8

## Research Question 5: Anticipation of Reactions to Schedules

Dunn-Bonferroni Tests

<u>SCALE</u>	<u>Study 1</u>	<u>Study 2</u>
	<u>Contrast 3</u>	<u>Contrast 4</u>
<u>Work schedule attitudes toward alternative schedule (4/40 or Flextime)</u>		
General Affect	-1.305	-0.899
Uniqueness	1.259	1.384
Work Coordination Effect	0.297	1.279
Client Service Effect	-0.295	--
Family and Social Life	0.545	-1.077
Transportation and Personal Security	0.176	0.966
Family Attitude	0.034	--

Note: Table values are the Dunn-BonFerroni statistics used to test contrast effects.